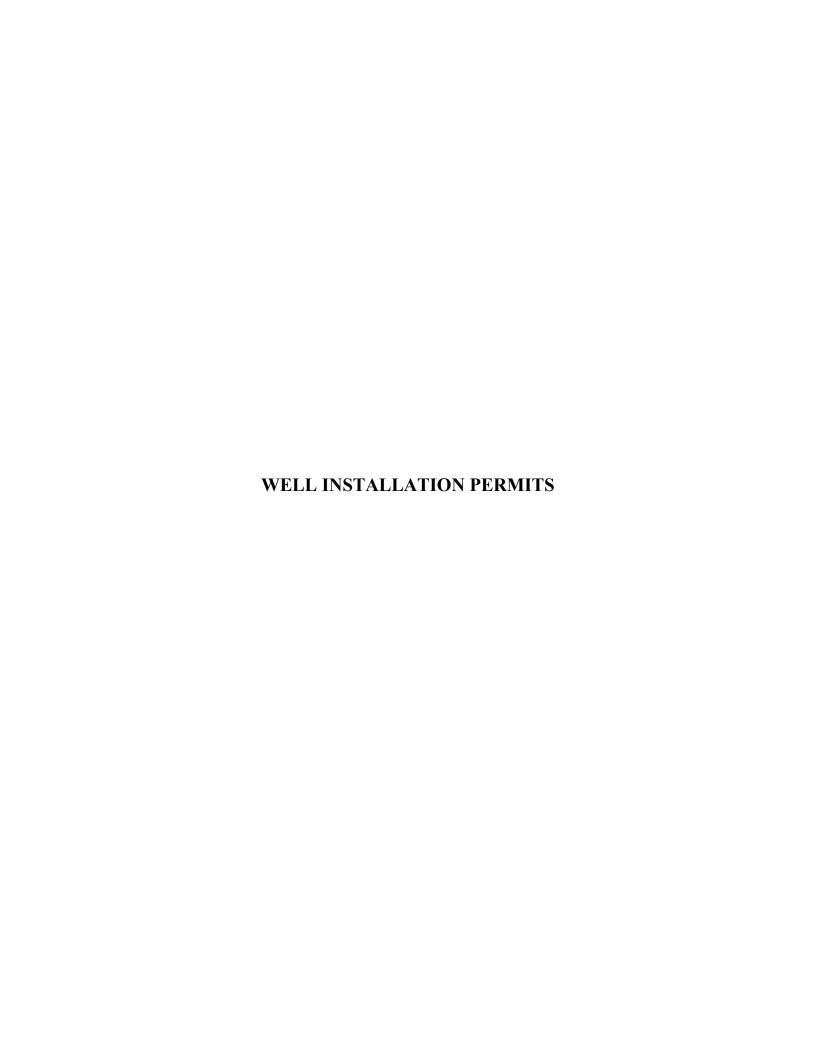
APPENDIX B SOIL VAPOR WELL INSTALLATION PERMITS AND SUBSURFACE SURVEYS GEOPHYSICAL REPORTS





PERMIT #LMON103707 A.P.N. #321-200-38-00 EST # H86017

COUNTY OF SAN DIEGO DEPARTMENT OF ENVIRONMENTAL HEALTH LAND AND WATER QUALITY DIVISION MONITORING WELL PROGRAM

MONITORING WELL AND BORING CONSTRUCTION AND DESTRUCTION PERMIT

SITE NAME: POWAY LANDFILL

SITE ADDRESS: 14900 POWAY ROAD, POWAY, CA 92064

PERMIT FOR: VARIANCE TO INSTALL 3 SMALL DIAMETER VAPOR WELLS

PERMIT APPROVAL DATE: JANUARY 25, 2006

PERMIT EXPIRES ON: MAY 25, 2006

RESPONSIBLE PARTY: COUNTY OF SAN DIEGO

PERMIT CONDITIONS:

- 1. This Variance does not relieve you of your professional obligations to construct the wells in a manner that will prevent the well(s) from being a potential environmental threat to water quality. The above wells must be constructed following the procedures for the installation of small diameter wells as stated in the SAM Manual, Appendix B, Section IV D (pages 19-36).
- 2. Wells must have a minimum 3-foot concrete surface seal. The surface seal shall consist of concrete able to withstand the maximum anticipated load without cracking or deteriorating. The concrete should meet Class A specifications of a minimum 4000-pound compressive strength.
- 3. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, E- 4. (http://www.sdcounty.ca.gov/deh/Iwq/sam/manual guidelines.html). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.
- 4. Within 60 days of completing work, submit a well construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.

5.	This office must be g	iven 48-hoເ	ur notice of an	y drilling	activity on	this site and
	advanced notification	of drilling	cancellation.	Please c	ontact the	Well Permit
	Desk at 338-2339.		1			

APPROVED BY:	12 MATO	DATE: <u>01/25/2006</u>
	KEVIN HEATON	

NOTIFIED: V.M. MS9 1/25/64 DEH:SAM-9075 (3/05)



COUNTY OF SAN DIEGO

DEPARTMENT OF ENVIRONMENTAL HEALTH 1255 Imperial Avenue, 3rd Floor San Diego, CA 92101 (619)338-2228

Page I of 1

RECEIPT NUMBER:

06-03152

Cashier: MALCANTA

APN: 321-200-38-00

DATE ISSUED: 13-JAN-2006

PERMIT: LMON T103707

SCOPE: MONITORING WELL/CATHODIC WELL

SITE ADDRESS: 14900 POWAY RD

Description

1020

SUBDIVISION:

²avment Code

CHECK

CITY: Poway, CA 92064

PARCEL OWNER: COUNTY OF SAN DIEGO

ADDRESS: PUBLIC AGENCY CITY/STATE/ZIP: 00000

PERMIT OWNER:

ADDRESS:

CITY/STATE/ZIP:

Fees Calculated 12 Months Back

<u>Date</u>	Fee Code	Description	Paid to Date	This Receipt	Balance Due
13 - JAN-2006	6LW25EHO	MONITORING WELL	\$0.00	\$361.00	\$144.00
13-JAN-2006	6LW25-ZCRO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	\$0.00	-\$50.50	\$0.00
13-JAN-2006	6LWMAINEHO	WELL MAINTENANCE FEE	\$0.00	\$160.00	\$0.00
13-JAN-2006	6LWMAINZCC	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	\$0.00	-\$16.00	\$0.00
		<u>.</u>	-		
		To	otals:	\$454.50	\$144.00

Amount \$454.5

Tendered:

\$454.5

Change:

Balance Due:



PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

OFFICE USE ONLY
PERMIT LMON # 103 707
SAM CASE Y/N #
DATE RECEIVED:
FEE PAID:
FEE PAID;

(The person, persons, or of Mailing Address 520	ompany responsible for the col D1 Ruffin Road	n Diego	n of the proposed borings and/or wells.) GO State ^{CA} Zip 92123			
		IF APPLICABLE #				
C. CONSULTING FIRM						
Mailing Address 113 Registered Professio Contact Person Sea	05 Rancho Bernardo onal Veryl Wittig n McClain	Rd Ste 101 City San Dieg Registration # $\frac{7}{2}$ Phone $\frac{858-674-6559}{20}$ Ext. 20	O State <u>CA</u> Zip <u>92127</u> 115 (PG) 3 Fax <u>858-674-6586</u>			
D. DRILLING COMPAN	Y <u>Vironex</u>	C57# <u>705927</u>				
Contact Name <u>Todd</u>	<u>Hanna</u>					
	5 East McFadden Avenu -6290	<u>City Santa Ana</u> Fax <u>714-647-6291</u>	State <u>CA</u> Zip <u>92705-</u>			
E. CONSTRUCTION IN	FORMATION					
TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED # Groundwater Vadose Boring Other Soil Vapor Wells NUMBER OF WELLS TO BE DESTROYED	CASING Not Applicable Type Gauge Diameter Well Screen Size Filter Pack	Cement & Bentonite Sand-Cement Bentonite Other Borehole diameter ing Method Air Rotary Other	PROPOSED CONSTRUCTION Estimated groundwater depth:ft. Estimated depth of boringft. Concrete			
l agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction. DRILLER'S SIGNATURE DATE / - 10 - 0C						
Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I will certify the design and construction or destruction of the well/borings in accordance with the permit application.						
PG/RCE SIGNATURE _	LJU	1 wfh	DATE /-/2-06			

F. SITE INFORMATION				
ASSESSOR'S PARCEL NUMBER 321-200-38 Site Name Poway Landfill Site Address 14900 Poway Road	3	City Poway	Zìp <u>S</u>	2064-
PROPERTY OWNER County of San Diego Phone 858-495-5480 Mailing Address 5201 Ruffin Road 92123-	Ext.	Fax City San Diego	State CA	Żip
NUMBER OF WELLS 3	TYPE OF W	ELLS Soil Vapor		
2. ASSESSOR'S PARCEL NUMBER Site Name Site Address	City	Zip _.		
	City	Fax State	Zip	
NUMBER OF WELLS	TYP	E OF WELLS		
3. ASSESSOR'S PARCEL NUMBER Site Name Site Address	City	Zip _		
PROPERTY OWNER Phone Ext Mailing Address	City	Fax State	Zip	
NUMBER OF WELLS	TYP	E OF WELLS		
4. ASSESSOR'S PARCEL NUMBER Site Name Site Address	City	Zip _		
PROPERTY OWNER Phone Ext Mailing Address	City	Fax State	Zíp	
NUMBER OF WELLS	TYPE	OF WELLS		

Permit Fees In Effect for July 1, 2005 - June 30, 2006

G. FEES (in effect beginning July 1, 2005, through June 30, 2006)

The County Board of Supervisors authorized a 10% credit, for the Fiscal Year ending June 30, 2006, to be applied to the Department of Environmental Health customers. This credit is being provided to qualified fee-based programs that have contributed to the cost reduction/cost containment/cost avoidance efforts initiated by the Department. This fee adjustment, for the Fiscal Year ending June 30, 2006, is applicable to fees and permits due and/or obtained during this period. The 10% is not applicable to enforcement fees or fees relating to non-compliance of permit regulations.

ACTIVITY	FEE SCHEDULE	AMOUNT	
	FEE ONE-TIME FISCAL YEAR 10% CREDIT		
Permit for Well Installations Only Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	\$185.00 for the first monitoring well \$185.00 – 10% <\$18.50> =	1 x \$166.50 \$	
Permit for Well Maintenance Inspection (Valid for three years)	\$100.00 for first well maintenance inspection \$100.00 – 10% <\$10.00> =	1x \$ 90.00 \$	
	\$160.00 for each additional well installation \$160.00 - 10% <\$16.00> =	2 x \$144.00 \$ <u>288.00</u>	
Each Additional New Well	S 30.00 for each additional well maintenance inspection S 30.00 - 10% <\$ 3.00> =	x \$ 27.00 \$	
Permit for Borings Only (CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)	\$185.00 for the first boring \$185.00 - 10% <\$18.50> = \$ 50.00 for each additional boring \$ 50.00 - 10% <\$ 5.00> =	x \$166.50 \$ x \$ 45.00 \$	
Permit for Well Destructions Only	\$185.00 for the first destruction \$185.00 10% <\$18.50> = \$120.00 for each additional destruction \$120.00 10% <\$12.00> =	1 x \$166.50 \$ x \$108.00 \$	
Permit for any Combination of Well nstallations, Borings, & Destructions (except UST backfill permit) Permit for any Combination of Well nstallations, Borings, & Destructions (except UST backfill permit)	The first activity will be \$185.00. $$185.00 - 10\% < $18.50 > =$ Additional activities will be as follows: $$160.00 \text{ for each additional well}$ $$160.00 - 10\% < $16.00 > =$ $$100.00 \text{ for first well maintenance inspection}$ $$100.00 - 10\% < $10.00 > =$ $$30.00 \text{ for each additional well maintenance inspection}$ $$30.00 - 10\% < $3.00 > =$ $$50.00 \text{ for each additional boring}$ $$50.00 - 10\% < $5.00 > =$ $$120.00 \text{ for each well destruction}$ $$120.00 - 10\% < $12.00 > =$	x \$166.50 \$ x \$144.00 \$ x \$ 90.00\$ x \$ 27.00 \$ x \$ 45.00 \$ x \$108.00 \$	
hamilionis mentra de productiva de comparado	TOTAL COST OF PERMIT	\$ <u>454.50</u>	

Permit for Underground Storage Tank Monitoring System in Backfill (i.e. Enhanced Leak Detection)

(Flat Fee) \$320.00 - 10% <\$32.00> =

\$288.00

Ql	JESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.
1.	If wells are to be destroyed, provide a description of method of destruction
2.	What is the purpose of the well/boring investigation?
	b. Part of a Phase I investigation for property ownership transfer or:
	C. Geotechnical investigation for proposed construction, land stabilization or:
	d. Other:
3.	What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? Soil vapor wells will be constructed immediately after borings reach target depths.
4.	What field procedures will be utilized to determine if contamination exists? No soil or groudnwater will be removed from borings.
5.	What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? No samples will be collected during installation of vapor wells.
6.	What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? After vapor well installation, soil vapor samples will be analyzed for VOCs by EPA Method TO-15 and fixed gases by ASTN D 1946.
7.	How will samples be transported and preserved? Samples will be handled using chain of custody procedures.
8.	What sampling methods will be used? Soil vapor samples will be collected in dedicated, laboratory cleaned Summic canisters.
9.	Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current_SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (http://www/sdcounty.ca.gov/deh/lwg/sam/monitoring well.html). 'Yes, please see attached well construction diagram.
10	. Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. NO
4.4	. What procedures will be used to ensure that the drilling equipment will introduce no contamination? Drilling

quipment will be cleaned prior to use.



Crystal, Marisue

From:

DBaumwirt@GeoSyntec.com

Sent:

Thursday, January 05, 2006 5:08 PM

To:

Crystal, Marisue

Cc:

CGale@GeoSyntec.com

Subject:

Permanent soil vapor well design

Attachments: image001.png; perm.soil.vapor.well.design.pdf

Hello Marisue.

Per our conversation earlier today, I have attached a diagram of my proposed well construction. Unfortunately I will be out of the office tomorrow (Friday), but if you wouldn't mind responding to my associate Chris Gale at cgale@geosyntec.com would be a huge help. If you have any questions or suggestions please let Chris know. We really appreciate your help with this. I believe that the only "variance" with this construction design is found in the 3x3 foot surface completion pad, but if you see any other variances please let us know.

Thank you very much in advance for your help.

Douglas Jorel Baumwirt Geologist GeoSyntee Consultants 11345 Rameito Bernardo Road, State 101 San Diego, CA 92127 Ph. 858 674 6559 x 225

Ph | 858.674.6559 x 225 Fax 858.674.6586



GeoSyntec Consultants

Morisce,

This looks ok. The I feel dry beality ober the sand is to present the marshir fun the hydrideral beality impactly the Porus tip of the vapor proble.

for (1/9/ci/

Walten Land		NSULTAN'			Page of
Written by: _/		•	Date: 06/01/05	Reviewed by:	Date:
Client:	F			Project/Proposal No.:	
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	CONCRETE				
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	:				7/
				Concuste	7" STEEL VAULT
	•			1"0	W DISED
			1/1/1	1/4" NYLON TUBING	VC RISER WITH LOCKING CAP
		[1/14	TUBING	
		~2'+		HYDRATED BENTONITE	
				BENTONITE	
		+	1/1/	1/2	** * * * ****
					NOTESS
				0 0	
		Î	0000	DRY	· 2-NESTED
		\perp	• • • • •	00	1/4" SOIL VAPOR W
		T		• •	· 2" DIRECT PUSH
		}		POUROUS TIP	BOREHOLE
		1.		FLITER PACK	• 3'x3' SWEACE
				FILTER PACK (SAMD)	COMPLETION
		<u></u>	· · · · · ·	· • • •	· LOCKING 4" CAP
		T	1/1/1/	/	ON 14125 K
		1	- 1/ <i>X///</i>	HYDRATED BENTONITE	•
		~3'4	1////	BENTONITE	.
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		1.		FILTER PACK (SAND)	
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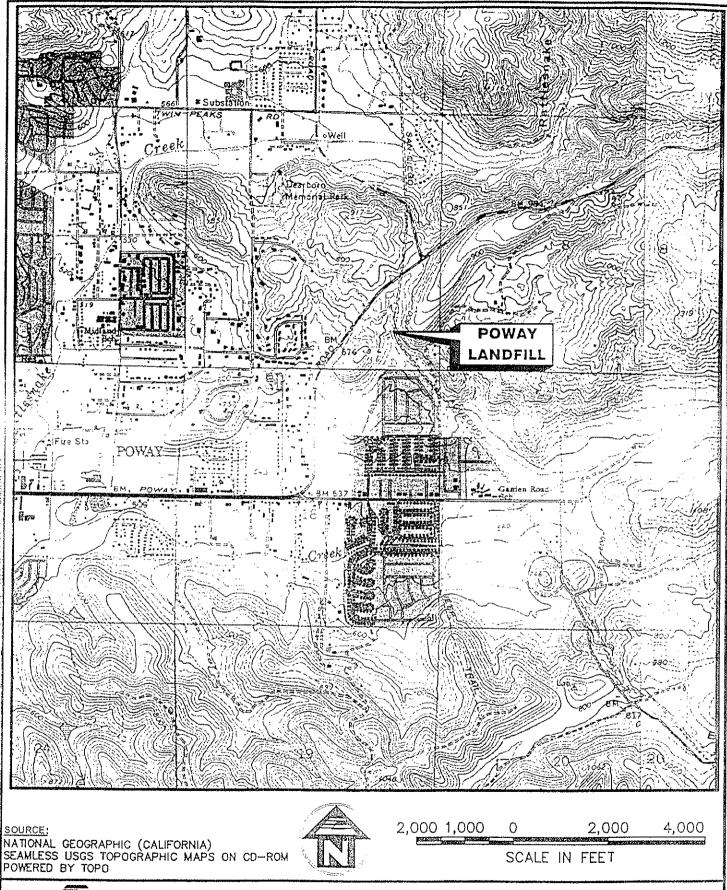
County of San Diego

GARY W. ERBECK DIRECTOR DEPARTMENT OF ENVIRONMENTAL HEALTH LAND AND WATER QUALITY DIVISION

P.O. BOX 129261, SAN DIEGO, CA 92112-9261 619-338-2222/FAX 619-338-2315/1-800-253-9933 www.sdcounty.ca.gov/deh/lwq RICHARD HAAS ASSISTANT DIRECTOR

PROPERTY OWNER RESPONSIBILITY ACKNOWLEDGEMENT

Proposed locations for subsurface work: Property Address:	Assess	sor's Parcel Number (APN):
Paury Londfill		321-200-	38
14900 Paury Rd. Paury, CA	-		
I ₁	, owner of the proper	ty/properties listed abo	ve, give my permission to
(constated above.	nsulting company, contr	ractor) to conduct the fo	ollowing work at the locations
[Install monitoring wells	Destroy mo	nitoring wells	Drill soil borings
The person who causes to have a monitoring water Responsible Party. San Diego County Code, construction or destruction standards. If a monitor arty must repair, reconstruct or destroy the mon Responsible Party, must take the necessary as standards if the Responsible Party does not construct the responsible Party does not c	Section 67.424, states ring well does not meet out on the state of the section of	that: "Monitoring wells construction or destruction or destruction e standards. The propertruct or destroy the mostions."	shall be maintained to meet on standards, the Responsible erty owner, if different than the onitoring well so it meets the
A soil boring is used specifically to sample soil a the definition of a monitoring well even though no Diego Site Assessment and Mitigation (SAM) M	maintenance is require	d. These standards are	outlined in the County of San
I understand that (registered authorized signer for of Environmental Health in which they have agricurrent SAM Manual, all ordinances and laws of construction and destruction.	ed professional) of(drilling company) had been described to complete the above the County of San Diego	nave submitted a signed bove-stated work accor o and the State of Califo	(consulting company) and an application to the Department ding the requirements of the brnia pertaining to well/boring
I also understand that if either the registered profe as defined in San Diego County Code, Section 6 reconstruct or destroy the monitoring well so it me actions.	67.424, I, as the propert	ty owner, must take the	necessary actions to repair.
The scope of work covered by this Acknowledg below. If an extension of time beyond one year proposed, a new Property Owner Responsibility	is required to complete	the proposed drilling a	e property owner's signature ctivities or additional work is
Property Owner Signature:		Da	te: <u>/-/0-05</u>
Print Name: Brypy Powon		Title:	oseolosus t
Lompany: County of San Dies	n dandfill	Management	
Mailing Address: 5201 Ruffin R	J. San Dieg	0 CA 9212	3





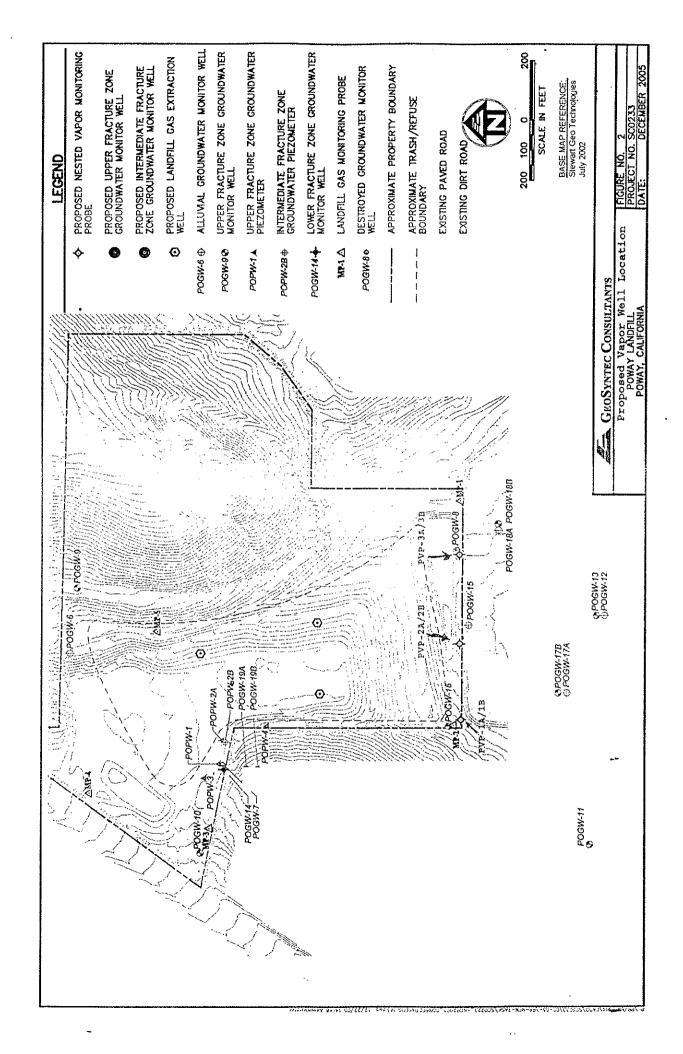
GEOSYNTEC CONSULTANTS

SITE LOCATION POWAY LANDFILL POWAY, CALIFORNIA FIGURE NO.

PROJECT NO. NCP2005

DATE:

NOVEMBER 2005





Site:	Poway Landfill			Date:	1/10/06
Well ID: PVP-1A/IB				Drilling Method:	Direct Push
Drilling Cor	npany: Vironex	ny: Vironex		Proposed Boring Depth:	36 ft bgs
Drillers:				Proposed Boring Diameter:	2-inches
Geologist:	Chris Gale		 ,	Proposed Well Depth:	31-36 ft bgs
	ገ በ			Well Diameter:	2 nested wells, each 1/4 -inches diameter
3 ft Concre	ete -	4" P	7" Steel Vault VC Riser w/ Locking	Proposed Well Construct Material:	tion: 1/4 " nylon tubing
		†	3 ft bgs	Inside Diamter:	
				Proposed Filter Pack:	
	in arated	(52) (53)		Type/Brand:	Sand
	Dentenite Dentenite	26 ft		Amount Used:	
	and the second s			Placement Method:	Tremie
	Dry	1	u, 11 of 2	Proposed Seal:	& ***************
	Bentonite	l ft		Type/Brand:	Bentonite chips/pellets
	3145 1888	1919; 1	30 ft bys	Amount Used:	
	Filter Pack	1 ft		Vol. Fluid Added:	
	(Sand) *			Set-up Time:	
			31 ft bgs	Placement Method:	Tremmie
				Proposed Grout:	
/		3-1 mbu		Type/Brand:	Cement
	Hydrated Bentonite			Amount Used:	***************************************
Porous		3 ft		Vol. Fluid Added:	
Tip				Placement Method:	
		8.65		Proposed Well Completion	n:
				Above Grade / Belo	w Grade / Flush Mounted
			34 ft bgs	Guard Posts? Y / I	N
	Dry Bentonite	1 ft		Pad Size:	3X3
			35 ft bgs	Cover Type/Size:	7-inch steel Flush Mount
	Filter	†	ou n uga	Comments:	
	Pack (Sand)	* 1 ft			

Nylon Tube

Geologist Signature:



Proposed Well Construction

site:	Poway Landfill	Date:	1/10/06
Well ID:	PVP-2A/2B	Drilling Method:	Direct Push
Drilling Company	: Vironex	Proposed Boring Depth:	13 ft bgs
Drillers:		Proposed Boring Diameter:	2-inches
Geologist:	Chris Gale	Proposed Well Depth:	8-13 ft bgs
		Well Diameter:	2 nested wells, each 1/4 -inches diameter
4	3.0		

Geologist:	Chr	is Gale		-	
4		3 ft			-
3 ft Concrete				4" PVC	7" Steel Vault . Riser w/ Locking Ca
-	resurated frantomite			3 ft	···· 3 ft bys
	Dry Bentonite			1	6 ft bys 7 ft bys
	Pack (Sand)	*		1 ft	
Tip	Dry Bentonite				···· IIftbgs
	Filter Pack (Sand)	1/4-incl	*	110	12 ft bgs 13 ft bgs
		Nylon Te	ube		

Proposed Well Construction:

Material:	1/4 " nylon tubing
Inside Diamter:	174 Byton tabing
inside Diamer.	
Proposed Filter Pack:	
Type/Brand:	Sand
Amount Used:	
Placement Method:	Tremie
Proposed Seal:	& [40] [40]
Type/Brand:	Bentonite chips/pellets
Amount Used:	
Vol. Fluid Added:	
Set-up Time:	
Placement Method:	Tremmie
Proposed Grout:	
Type/Brand:	Cement
Amount Used:	
Vol. Fluid Added:	•
Placement Method:	
Proposed Well Completion:	
Above Grade / Below Grade	/ Flush Mounted
Guard Posts? Y / N	
Pad Size:	3X3
Cover Type/Size:	7-inch steel Flush Mount
Comments:	
Geologist Signature:	
	*



Proposed Well Construction

Site:	Poway Landfill		I	Date:	. 1/10/06
Well ID:	PVP-3A/3B			Orilling Method:	Direct Push
Drilling Comp	any: Vironex		F	roposed Boring Depth:	LS ft bgs
Drillers:	<u> </u>		F	roposed Boring Diameter:	2-inches
Geologist:	Chris Gale		P	roposed Well Depth:	10-15 ft bgs
			V	Vell Diameter:	2 nested wells, each 1/4 -inches diameter
3 ft Concrete	3.0	4" PVC R	7" Steel Vault Riser w/ Locking Cap	Proposed Well Constru Material: Inside Diamter:	
	invarated is anionite	5 ft		Type/Brand: Amount Used: Placement Method:	Sand
	Dry. Bentonite	1 ft	8 ft bys	Proposed Seal: [Type/Brand:	& Bentonite chips/pellets
	Filter Pack (Sand)	1 ft	9 ft bgs 10 ft bgs	Amount Used: Vol. Fluid Added: Set-up Time:	
	Hydrated Bentonite		ro it ogs	Type/Brand: Amount Used:	Cement
Porous Tip		3 ft		Vol. Fluid Added: Placement Method: Proposed Well Completio Above Grade / Bel	
			13 ft bgs	Guard Posts? Y /	N
ı	Dry Control Bentonite	l ft		Pad Size:	3X3
				Cover Type/Size:	7-inch steel Flush Mount
	Filter Pack (Sand)	l ft	14 ft bgs 15 ft bgs	Comments:	
	1/4-inch Nylon Tu 2-inch	be	-	Geologist Signature	
	Borehole D				***-

P:\PRJ\SDWP\Current Projects\SC0233 Poway\Well Permits\wellconstructionPVP-3A-3B.xls



PERMIT #LMON103853 A.P.N. #321-200-38-00 FST # H86017

COUNTY OF SAN DIEGO DEPARTMENT OF ENVIRONMENTAL HEALTH LAND AND WATER QUALITY DIVISION

MONITORING WELL AND BORING CONSTRUCTION AND DESTRUCTION PERMIT

SITE NAME: POWAY LANDFILL

SITE ADDRESS: 14900 POWAY RD., POWAY, CA 92064

PERMIT FOR: VARIANCE TO INSTALL 14 SOIL VAPOR WELLS

PERMIT APPROVAL DATE: MARCH 17, 2006

PERMIT EXPIRES ON: JULY 15, 2006

RESPONSIBLE PARTY: COUNTY OF SAN DIEGO

PERMIT CONDITIONS:

- 1. This Variance does not relieve you of your professional obligations to construct the wells in a manner that will prevent the well(s) from being a potential environmental threat to water quality. The above well(s) must be constructed following the procedures for the installation of small diameter wells stated in the SAM Manual, Appendix B, Section IV D (pages 19-36).
- 2. Wells must have a minimum 3-foot concrete surface seal. The surface seal shall consist of concrete able to withstand the maximum anticipated load without cracking or deteriorating. The concrete should meet Class A specifications of a minimum 4000-pound compressive strength.
- 3. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, E- 4. (http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.
- 4. Within 60 days of completing work, submit a well construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.
- 5. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 338-2339.

APPROVED BY: DATE: 03/17/2006

NOTIFIED: 3/17/06 EP



PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

OFFICE USE ONLY
PERMIT LMON# 103853
SAM CASE Y/N #
DATE RECEIVED:
FEE PAID:
CHECK#

Mailing Address 52	company responsible for the c 01 Ruffin Road	construction, maintenance, and destruction	ego ctoto CA 02122
B. SITE ASSESSMENT	PROJECT NUMBER -	- IF APPLICABLE #	
Registered Profession	75 Rancho Bernard	o Rd Ste 200 City San Dieg	7115 (PG)
D. DRILLING COMPAN		C57# <u>705927</u>	E)
Contact Name Todd	<u>Hanna</u>		6
Mailing Address <u>122</u> Phone <u>714-647</u>	5 East McFadden Aven -6290	<u>ue</u> City <u>Santa Ana</u> Fax <u>714-647-6291</u>	State Zip <u>92705-</u>
E. CONSTRUCTION IN	FORMATION		
TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED # Groundwater Vadose Boring X Other 14 Soil Vapor Wells NUMBER OF WELLS TO BE DESTROYED	CASING Not Applicable Type Gauge Diameter Well Screen Size Filter Pack Dril Auger Mud Rotary	Cement & Bentonite Sand-Cement Bentonite Other Borehole diameter Iing Method Air Rotary	PROPOSED CONSTRUCTION Estimated groundwater depth: Estimated depth of boringft. Concrete
		rrent Site Assessment and Mitiga f California pertaining to well/bori	ation Manual, and with all ordinances and ng construction and destruction.
DRILLER'S SIGNATURE			DATE /-/0-0C
Within 60 days of comple will certify the design and	tion, I will furnish the Mo construction or destruc	onitoring Well Permit Desk with a tion of the well/borings in accord	complete and accurate well/boring log. I ance with the permit application.
PG/RCE SIGNATURE	- HU	laff)	DATE 3-/0-06

8	SITE INFORMATION			
1	. ASSESSOR'S PARCEL NUMBER 321-200-38 Site Name Poway Landfill Site Address 14900 Poway Road PROPERTY OWNER County of San Diego Phone 858-495-5480 Mailing Address 5201 Ruffin Road, Suite D	City <u>Poway</u> Ext.	Zip <u>92064-</u> Fax City <u>San Diego</u> State <u>CA</u>	
	Zip <u>92123-</u> NUMBER OF WELLS <u>1</u>	TYPE OF WELLS <u>Var</u>	por Wells	
2	. ASSESSOR'S PARCEL NUMBER Site Name Site Address	City	Zip	
	PROPERTY OWNER Phone Ext Mailing Address	Fax	State Zip	
	NUMBER OF WELLS	TYPE OF WEI		
3.	ASSESSOR'S PARCEL NUMBER Site Name Site Address	City	Zip	
	PROPERTY OWNER Phone Ext Mailing Address	Fax	State Zip	
	NUMBER OF WELLS	TYPE OF WEL	LS	
4.	ASSESSOR'S PARCEL NUMBER Site Name Site Address	City	Zip	
	PROPERTY OWNER Phone Ext Mailing Address	Fax	State Zip	The state of the s
	NUMBER OF WELLS	TYPE OF WEL	LS	

Permit Fees In Effect for July 1, 2005 - June 30, 2006

G. FEES (in effect beginning July 1, 2005, through June 30, 2006)

The County Board of Supervisors authorized a 10% credit, for the Fiscal Year ending June 30, 2006, to be applied to the Department of Environmental Health customers. This credit is being provided to qualified fee-based programs that have contributed to the cost reduction/cost containment/cost avoidance efforts initiated by the Department. This fee adjustment, for the Fiscal Year ending June 30, 2006, is applicable to fees and permits due and/or obtained during this period. The 10% is not applicable to enforcement fees or fees relating to non-compliance of permit regulations.

ACTIVITY	FEE SCHEDULE	AMOUNT
	FEE ONE-TIME FISCAL YEAR 10% CREDIT	
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	\$185.00 for the first monitoring well \$185.00 – 10% <\$18.50> =	
Permit for Well Maintenance Inspection (Valid for three years)	\$100.00 for first well maintenance inspection \$100.00 - 10% <\$10.00> =	x \$ 90.00 \$ 90.00
Each Additional New Well	S 30.00 for each additional well installation S 30.00 for each additional well maintenance inspection S 30.00 - 10% <\$ 3.00> =	/3 × \$144.00 \$ 1.872 ac /3 × \$ 27.00 \$ 357.00
Permit for Borings Only (CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)	\$185.00 for the first boring \$185.00 - 10% <\$18.50> = \$ 50.00 for each additional boring \$ 50.00 - 10% <\$ 5.00> =	× \$166.50 \$ × \$ 45.00 \$
Permit for Well Destructions Only	\$185.00 for the first destruction \$185.00 10% <\$18.50> = \$120.00 for each additional destruction \$120.00 10% <\$12.00> =	x \$166.50 \$ x \$108.00 \$
Permit for any Combination of Well Installations, Borings, & Destructions (except UST backfill permit) Permit for any Combination of Well Installations, Borings, & Destructions (except UST backfill permit)	The first activity will be \$185.00. \$185.00 - 10% <\$18.50> = Additional activities will be as follows: \$160.00 for each additional well \$160.00 - 10% <\$16.00> = \$100.00 for first well maintenance inspection \$100.00 - 10% <\$10.00> = \$ 30.00 for each additional well maintenance inspection \$ 30.00 - 10% <\$ 3.00> = \$ 50.00 for each additional boring \$ 50.00 - 10% <\$ 5.00> = \$120.00 for each well destruction \$120.00 - 10% <\$12.00> = TOTAL COST OF PERMIT	
ermit for Underground Storage Tank Monitoring System in Backfill (i.e. Enhanced Leak Detection)	(Flat Fee) \$320.00 – 10% <\$32.00> =	\$288.00

QL	JESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.
1.	If wells are to be destroyed, provide a description of method of destruction NA
2.	What is the purpose of the well/boring investigation?
	a. Part of an ongoing site assessment case in which DEH or another government regulator is the lead agency.
	b. Part of a Phase I investigation for property ownership transfer or:
	C. Geotechnical investigation for proposed construction, land stabilization or:
	d. Other:
3.	What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? The vapor wells will be installed imediately after the borings are completed
4.	What field procedures will be utilized to determine if contamination exists? The cuttings will be screened with a photoionization detector (PID) and a composite sample from the cuttings will be submitted to an analytical laboratory for analysis
5.	What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? Soil Vapor samples will be submitted to an analytical laboratory
6.	What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? <u>VOCs EPA Method TO-15 and Fixed Gases</u>
7.	How will samples be transported and preserved? Soil Vapor samples will be Fed-Ex to lab (No perservative).
8.	What sampling methods will be used? Soil cuttings will be stored in 55-gallon drums and one composite soil sample will be collected from all drums.
9.	Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (http://www/sdcounty.ca.gov/deh/lwg/sam/monitoring well.html). :yes, see attached diagram per discussion with Kevin Heaton
10.	Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. No
11.	What procedures will be used to ensure that the drilling equipment will introduce no contamination? <u>Drilling</u> equipment will be steamed cleaned prior to drilling onsite

well location

12. What methods will be used to clean sampling equipment? New sampling tubbing will be used at each vapor

which will arrive	method will be used onsite pre-wrapped			,		
						<i>2</i>
			. •			(
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					-	



County of San Diego

GARY W. ERBECK DIRECTOR DEPARTMENT OF ENVIRONMENTAL HEALTH LAND AND WATER QUALITY DIVISION P.O. BOX 129261, SAN DIEGO, CA 92112-9261 619-338-2222/FAX 619-338-2315/1-800-253-9933 RICHARD HAAS ASSISTANT DIRECTOR

PROPERTY OWNER RESPONSIBILITY ACKNOWLEDGEMENT

www.sdcounty.ca.gov/deh/lwq

THOTEINTON	MER REGIONOIDIEM FACTOR REDOCTION	1
Proposed locations for subsurface work: Property Address:	Assessor's Parcel Number (AP	N):
14900 Poway Road	321-200-38	
Poway,Ca,92064		
i,Barry Pulver	, owner of the property/properties listed above	, give my permission to
GeoSyntec Consultants(c	consulting company, contractor) to conduct the following	ng work at the locations
K Install 14 monitoring wells	Destroy monitoring wells	Drili soil borings
Responsible Party. San Diego County Co construction or destruction standards. If a mo Party must repair, reconstruct or destroy the	ng well installed or an existing well destroyed on this ode, Section 67.424, states that: "Monitoring wells shoultoring well does not meet construction or destruction or monitoring well so it meets the standards. The property ry actions to repair, reconstruct or destroy the monit complete the necessary actions."	all be maintained to meet standards, the <i>Responsible</i> owner, if different than the
the definition of a monitoring well even thoug	oil and, because there are construction and destructio Ih no maintenance is required. These standards are ou II) Manual and the State of California Well Standards E	tlined in the County of San
authorized signer for <u>Vironex</u> of Environmental Health in which they have	rofessional) of #7115 (consulting company) and an (drilling company) have submitted a signed ap agreed to complete the above-stated work accordings of the County of San Diego and the State of California	g the requirements of the
as defined in San Diego County Code, Sect	professional and/or the licensed drilling company should ion 67.424, I, as the property owner, must take the neit meets the standards if the Responsible Party does no	cessary actions to repair,
Property Owner Signature: // /////	Date:	3/10/06
Print Name: NAMA WULVE	on Title: Ayle	exedosis +
Company: Count of Sas	n Diego	
Mailing Address: 5200 P. Ha	Rd MS 0383 Som Pier	CA-92123



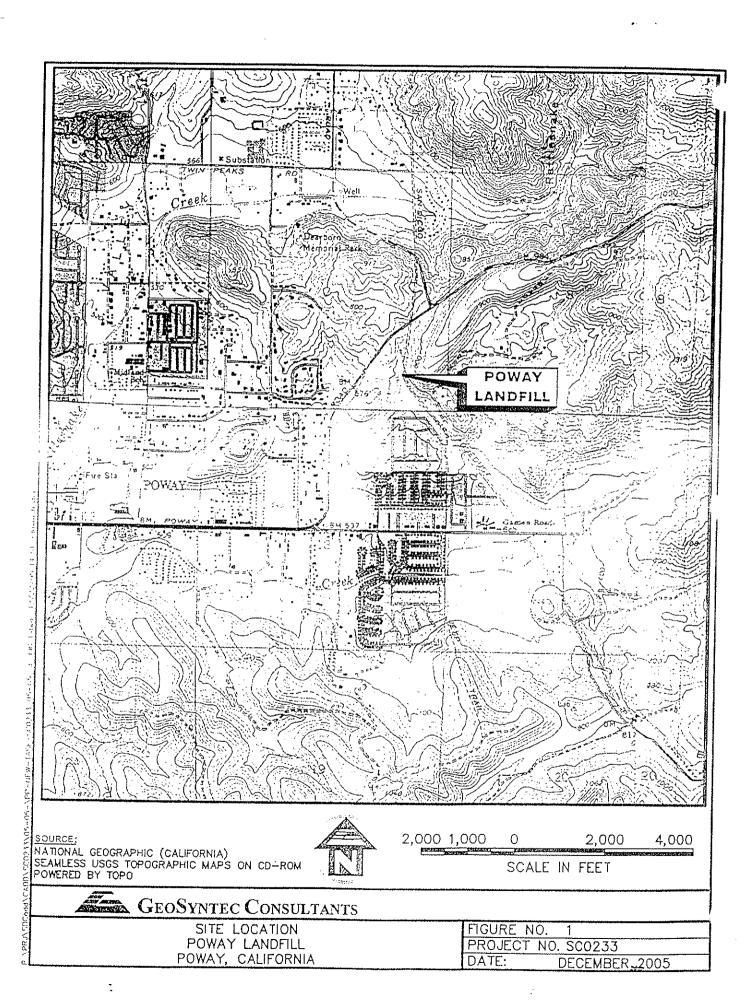
Proposed Well Construction

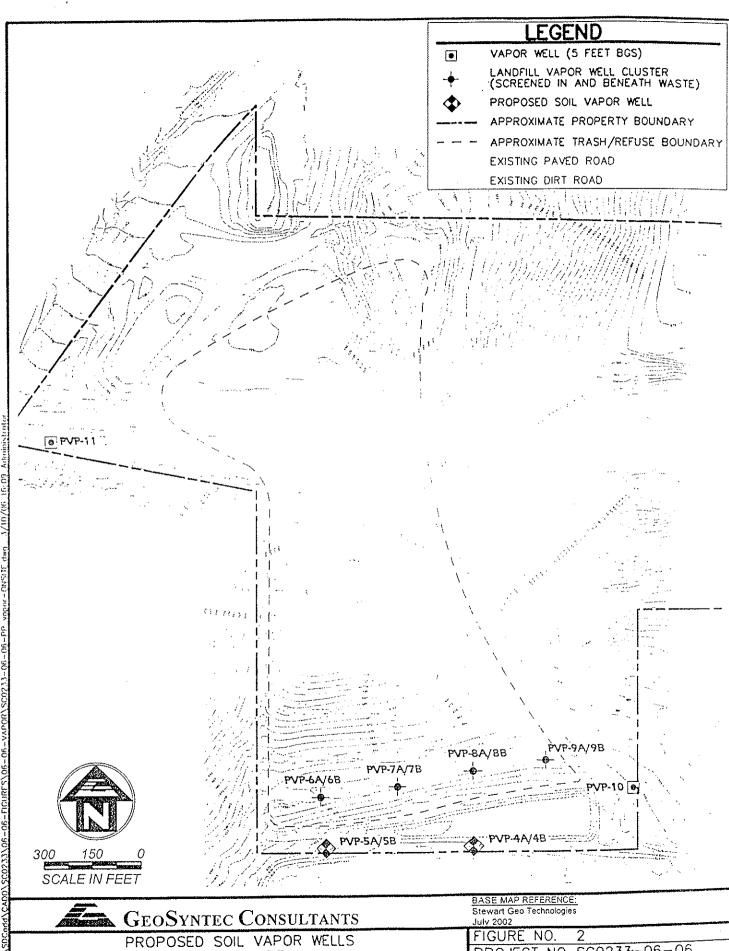
Well ID: PVP-4A/4B through PVP-9A/9B Drilling Company: Vironex Proposed Boring Depth: 12-25 feet bgs Proposed Boring Diam 2-inches Proposed Well Depth: 12-25 feet bgs Well Diameter: 12-25 feet bgs Well Diameter: 14-inches diameter 4.0 The standard of the proposed Well Construction: Proposed Well Construction: Material: 1/4 "nylon tubing Inside Diameter: Proposed Filter Pack: 1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	Site:	Poway Landfill			Date:	3/10/06
Drillers: Geologist: Sean McClain Sean McClain Proposed Well Depth: 4 n 12-25 feet begs Well Diameter: 2 Vapor well cluster, each 14-inches diameter 7" Steel Vault 4" PVC Riser w/ Locking Cap Pronosed Well Construction: Material: Injude Diameter: Proposed Filter Pack: Type Brand: Amount Used: 2 Remember Amount Used: 3 Remember Amount Used: 3 Remember Amount Used: 4 Proposed Seal: 4 Remember Amount Used: 5 Remember Amount Used: 5 Remember Amount Used: 5 Remember Amount Used: 7 Remember Amoun	Well ID:	PVP-4A/4B through PVP-9A/9B		***************************************	Drilling Method:	Direct Push
Geologist: Scan McClain Proposed Well Depth: 12-25 feet bas Well Diameter: 2 Vapor well cluster, each 1/4 -inches diameter 7" Steel Vault 4" PVC Riser w/ Locking Cap Proposed Well Construction: Material: 1/4 "nylon tubing Inside Diameter. Proposed Filter Pack: Type Brand: Sand: Amount Used: 6" above & 6" below Placement Method: Tremue Proposed Seel: 1 & Sand: Amount Used: 2" dry, 6-19" hydrated above Vol. Fleid Added: Set-up Time: Proposed Grout: Proposed Grout: Tremuic	Drilling Company:	Vironex			Proposed Boring Depth:	12-25 feet bgs
Well Diameter: 2 Vapor well cluster, each 1/4 - inches diameter 7" Steel Vault 4" PVC Riser w/ Locking Cap Proposed Well Construction: Material:	Drillers:				Proposed Boring Diam:	2-inches
Type Brand: 2 ft Benisher 14 "PVC Riser w/ Locking Cap Proposed Well Construction: Material: If I "nylon tubing Inside Diamter: Proposed Filter Pack: Type Brand: Amount Used: Seed Amount Used: Type/Brand: Type/Brand: Type/Brand: Type/Brand: Type/Brand: Type/Brand: Seed Amount Used: Type/Brand: Type/Brand: Seed Tremmie Proposed Granutar Bentonite Proposed Granutar Bentonite Type/Brand: T	Geologist:	Sean McClain		····	Proposed Well Depth:	12-25 feet bes
7" Steel Vault 7" Steel Vault 4" PVC Riser w/ Locking Cep Pronosed Well Construction: Material: 1/4" nylon tubing Inside Diamter: Proposed Filter Pack: Type/Brand: Sand Amount Used: 5" above & 6" below Placement Method: Treme Proposed Seal: 5" Type/Brand: Granular Bemonite 16 ft Pack 15 per 15 pe					Well Diameter:	2 Vapor well cluster, each
A" PVC Riser w/ Locking Cap Proposed Well Construction: Material: I/4 " nylon tubing Inside Diamter: Proposed Filter Pack: Type/Brand: Sand Amount Used: 6" above & 6" below Placement Method: Treme Proposed Scal: Sand Amount Used: 2" dry: 6-19" hydrated above Vol. Fluid Added: Set-up Time: Placement Method: Tremmie Proposed Grout: Set-up Time: Placement Method: Tremmie	-	<u> य ते</u>				1/4 -inches diameter
Type/Brand: Amount Used: Proposed Scal: Type/Brand: T	l .				g Cap Proposed Well Constru Material: Inside Diamter:	
Amount Used 6" above & 6" below Placement Method: Tremie Proposed Scal:		Some Summer of the second	STATE OF THE STATE		-	
Amount Used: So above & 6" below Placement Method: Tremie Proposed Seal: Seal	6 fr h-===	• Committee Comm	i commi		Type/Brand:	Sand
Proposed Scal: Proposed Scal:	825777	1 CONTANTANT :			Amount Used	of above & 6" below
Proposed Seal: Type/Brand: Granular Bentonite Type/Brand: Type/Brand: One of the seal	-	1.5 T	STATES OF THE ST		Placement Method:	Tremie
1 ft Park Serence Dam. Proposed Grout: Pro			STATES		***************************************	······································
Filter Pack (Sand) Placement Method: Tremmie Proposed Grout: Type/Brand: Concrete	1		Miller History	19 ft		
1 ft Park Set-up Time: Set-up Time: Placement Method: Tremmic	<u> </u>		Section Bentonite	1010		2' dry; 6-19' hydrated above
Placement Method: Tremmie 2-inch Screndle Dam. Proposed Grout: Type/Brand: Concrete			summ.		Vol. Fluid Added:	
Placement Method: Tremmie 2-inch Serencie Dam. Proposed Grout: Type/Brand: Concrete	(Sand)		annen.		Set-up Time:	
Ecrencie Dam. Proposed Grout: Type/Brand: Concrete			414444		Placement Method:	Tremmie
Type/Brand: Concrete		Sprenole Dram.	mann.		Proposed Grout: 💢	
(Account Annual Account Annual Accou		2000 VIII	11111111		Type/Brand:	Concrete.
Amount Used:		Services -	STATION STATES			
		and the second	ALLIANIA ALLIANIA			
Samuel Annual		menne.	222222			
6-inch long		G820				<u>.</u>
stainless steel Proposed Well Completion:					Proposed Well Completion	ı:
wire screen Above Grade / Below Grade / Flush Mounted		wire screen	Dr.		Above Grade / Belo	w Grade / Flush Mounted
Bentonite 2 ft Guard Posts? Y / N				2 ft	Guard Posts? Y /	Y.
Pad Size: 4X3					Pad Size:	4X3
Cover Type/Size: 7-inch steel Flush Mount					Cover Type/Size:	7-inch steel Flush Mount
Filter Pack (Sand) 1 ft			Pack	1 ft		
2-inches Borehole Dram.						
Geologist Signature:		O O B I OR	z =xu·iik		Geologist Signature:	



Proposed Well Construction

Site:	Poway Landfi	11	 	Date:	3/10/0	6
Well ID:	PVP-10 and F	VP-11		Drilling Method:	Direct I	Push
Drilling Company:	Vironex			Proposed Boring Depth:	5 feet b	25
Drillers:				Proposed Boring Diameter:	2-inche	s
Geologist:	Sean McClain			Proposed Well Depth:	5 feet b	
		• •		Well Diameter:	1/4 -inc	hes diameter
3 ft Concrete Hodra Bonto Pittor Pack (Sand	The state of the	3 6		Proposed Well Constr g Cap Material: Inside Diamter: Proposed Filter Pack: Type Brand. Amount Used: Placement Method Proposed Seal: Type/Brand:	i:	hes diameter /4 " nylon tubing and framie Granualar Bentonite 0.5" dry and 0.5" hydrated Tremnie Concrete
				a stration.		
				· · · · · · · · · · · · · · · · · · ·		
				Geologist Signatur	e:	NgCopt





PROPOSED SOIL VAPOR WELLS
POWAY LANDFILL
POWAY, CALIFORNIA

PROJECT NO. SC0233-06-06
DATE: MARCH 2006

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PERMIT #LMON103898 A.P.N. #321-200-38, 323-461-25-00 EST # H86017

COUNTY OF SAN DIEGO DEPARTMENT OF ENVIRONMENTAL HEALTH LAND AND WATER QUALITY DIVISION MONITORING WELL PROGRAM

MONITORING WELL AND BORING CONSTRUCTION AND DESTRUCTION PERMIT

SITE NAME: POWAY LANDFILL

SITE ADDRESS: 14900 POWAY RD. & SUNSET VIEW RD., POWAY CA 92064

PERMIT FOR: INSTALL 3 GROUNDWATER MONITORING WELLS

PERMIT APPROVAL DATE: APRIL 5, 2006 PERMIT EXPIRES ON: AUGUST 3, 2006

RESPONSIBLE PARTY: COUNTY OF SAN DIEGO, LANDFILL MANAGEMENT

PERMIT CONDITIONS:

- 1. Wells must have a minimum 3-foot concrete surface seal. The surface seal shall consist of concrete able to withstand the maximum anticipated load without cracking or deteriorating. The concrete should meet Class A specifications of a minimum 4000-pound compressive strength.
- 2. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, E- 4. (http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.
- 3. Within 60 days of completing work, submit a well construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.
- 4. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 338-2339.

APPROVED BY:	74 nH	DATE: <u>04/05/2006</u>
	KEMIN HEATON	

NOTIFIED: 24 dp/db V-Missage)
DEH:SAM-9075 (3/05)



COUNTY OF SAN DIEGO

DEPARTMENT OF ENVIRONMENTAL HEALTH 1255 Imperial Avenue, 3rd Floor San Diego, CA 92101 (619)338-2228

Page 1 of 1

RECEIPT NUMBER:

06-0322662

Cashier:

EGA

APN: 321-200-38-00

DATE ISSUED: 04-APR-2006

PERMIT: LMON T103898

SCOPE: MONITORING WELL/CATHODIC WELL

SITE ADDRESS: NO ADDRESS

SUBDIVISION:

CITY:

PARCEL OWNER: COUNTY OF SAN DIEGO

ADDRESS: PUBLIC AGENCY

CITY/STATE/ZIP: 00000

PERMIT OWNER:

ADDRESS:

CITY/STATE/ZIP:

Fees Calculated 12 Months Back

<u>Date</u>	Fee Code	<u>Description</u>	Paid to Date	This Receipt	Balance Due
)3-APR-2006	6LW25EHO	MONITORING WELL	\$185.00	\$0.00	\$0.00
)3-APR-2006	6LW25-ZCRO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	-\$18.50	\$0.00	\$0.00
)3-APR-2006	6LWMAINEHO	WELL MAINTENANCE FEE	\$100.00	\$0.00	\$0.00
)3-APR-2006	6LWMAINZCO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	-\$10.00	\$0.00	\$0.00
)3-APR-2006	6LWAMEHO	ADDITIONAL MONITORING WELL	\$319.00	\$1.00	S0 00
)3-APR-2006	6LWAM-ZCRO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	-\$32.00	\$0.00	Sinfilia
)3-APR-2006	6LWMAIXEHO	ADDITIONAL WELL MAINTENANCE FEE	\$60.00	\$0.00	\$ - 5.
13-APR-2006	6LWMAIXZCO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	-\$6 00	\$0.00	₹
		Totals:		\$1.00	<u> </u>

Amount

Payment Code

CASH

Description

CASH PAYMENT

Tendered:

Change:

\$0,00

Balance Due:

Solon

\$1.60



COUNTY OF SAN DIEGO

DEPARTMENT OF ENVIRONMENTAL HEALTH 1255 Imperial Avenue, 3rd Floor San Diego, CA 92101 (619)338-2228

RECEIPT NUMBER:

Cashier:

06-0322661 **EGARCIA**

Page 1 of 1

APN: 321-200-38-00

DATE ISSUED: 04-APR-2006

PERMIT: LMON T103898

SCOPE: MONITORING WELL/CATHODIC WELL

SITE ADDRESS: NO ADDRESS

SUBDIVISION:

CITY:

PARCEL OWNER: COUNTY OF SAN DIEGO

ADDRESS: PUBLIC AGENCY

CITY/STATE/ZIP: 00000

PERMIT OWNER:

ADDRESS:

CITY/STATE/ZIP:

Fees Calculated 12 Months Back

<u>Date</u>	Fee Code	Description	Paid to Date	This Receipt	<u>Balance Duc</u>
13-APR-2006	6LW'25EHO	MONITORING WELL	\$0.00	\$185.00	\$0.00
3-APR-2006	6LW25-ZCRO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	\$0.00	-\$18.50	\$0.00
3-APR-2006	6LWMAINEHO	WELL MAINTENANCE FEE	\$0.00	\$100.00	\$0.00
:3-APR-2006	6LWMAINZCO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	\$0.00	-\$10.00	\$0.00
3-APR-2006	6LWAMEHO	ADDITIONAL MONITORING WELL	\$0.00	\$319.00	\$1.00
3-APR-2006	6LWAM-ZCRO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	\$0.00	- \$32.00	S8 60
3-APR-2006	6LWMAIXEHO	ADDITIONAL WELL MAINTENANCE FEE	\$0.00	\$60.00	\$0,00
3-APR-2006	6LWMAIXZCO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	\$0.00	-\$6.00	2:
					· · · · · · · · · · · · · · · · · · ·

\$1.... Totals: \$597.50

aym nt Code

CHL .

Description

1063

Amount

\$597.50

\$597.50

\$0.00

\$1.00

Tendered: Change:

Balance Due:

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST PORTOS 1 4

- 37		
	OFFICE USE ONLY	
İ	PERMIT LMON # 103898	
	SAM CASE Y/N #	
	DATE RECEIVED:	-
r	FEE PAID:	-
ſ	CHECK#	***
L		

	• 1	* ** !I				
		D. 2. H.				
A. RESPONSIBLE PA	RTY County OF S.	an Diego, LANGAIPM	nagement Phone 858-495-5480			
(The person, persons, or company responsible for the construction, maintenance, and destruction of the proposed borings and/or wells.)						
Mailing Address <u></u>	201 Kuthin Kd S	Fe, D City, San Di	GO State CA 7in 92/23			
Contact Person	Berry Pulver	Phone 858-498-5450 Ext.	Fax			
	T PROJECT NUMBER -					
C. CONSULTING FIRM	MGeoSyntec	Consultants				
Mailing Address	10875 Ranche B	rnardo Pol sk aco San /-	Dirgo State CA Zip 92127			
Registered Professi	onal Sam Willing	Registration #	4858 (PG)			
Contact Person	— Sean McClain	Phone 858-614-6559 Ext. 6	P11 Fax 858-674-6586			
D. DRILLING COMPAN	Y TRI-COUNTY DRILL	ING, INC.	C57# 547737			
Contact Name <u>Tim I</u>	<u>Duddie</u>					
Mailing Address <u>963</u>	31 Candida Street	City <u>San Diego</u>	State CA 7in 00400			
Phone 858-271		Fax <u>858-271-0233</u>	State <u>CA</u> Zip <u>92126-</u>			
E. CONSTRUCTION IN						
TYPE OF WELLS/	MATTER	ALC TO DE MOED	1			
BORINGS TO BE	j	ALS TO BE USED	PROPOSED CONSTRUCTION			
CONSTRUCTED	CASING	SEAL/BORING	Estimated groundwater depth:			
#	N = 4 A = = 15 = = 1= 5 =	BACKFILL	Estimated depth of boring f			
☑ Groundwater 3	Not Applicable Type _ <i>PVC</i>		Concrete 0 to 3			
☐ Vadose	Gauge <u>SC// 40</u>	☑ Cement & Bentonite ☐ Sand-Cement				
☐ Boring·	Diameter 2-inch	☐ Bentonite	Annular seal Se Diagram toto			
Other	Well Screen Size	Other	Annuar searto			
	0.02		Bentonite to			
NUMBER OF WELLS	Filter Pack #3	Borehole diameter 6-10ch	transition seal			
TO BE DESTROYED		 	Filter Packto			
,		ing Method	Perforation to			
	Auger	-Air Rotary				
	☐ Mud Rotary	☐ Other	NOTE:			
	Percussion		Attach a well construction diagram for wells with multiple completions			
I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction.						
iaws of the County of Sar	Diego and the State of	California pertaining to well/borii	ng construction and destruction.			
DRILLER'S SIGNATURE DATE 3-27-06						
	') '					
Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I						
will certify the design and	construction or destruct	initoring well Permit Desk with a lon of the well/borings in accorda	complete and accurate well/boring log. I			
,			and with the permit application.			
	Am tell	22.	7 70 47			
PG/RCE SIGNATURE	Thur Wall	www	DATE 3.29.06			
			}			

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Permit Fees In Effect for July 1, 2005 - June 30, 2006

G. FEES (in effect beginning July 1, 2005, through June 30, 2006)

The County Board of Supervisors authorized a 10% credit, for the Fiscal Year ending June 30, 2006, to be applied to the Department of Environmental Health customers. This credit is being provided to qualified fee-based programs that have contributed to the cost reduction/cost containment/cost avoidance efforts initiated by the Department. This fee adjustment, for the Fiscal Year ending June 30, 2006, is applicable to fees and permits due and/or obtained during this period. The 10% is not applicable to enforcement fees or fees relating to non-compliance of permit regulations.

ACTIVITY	FEE SCHEDULE	AMOUNT
	FEE ONE-TIME FISCAL YEAR 10% CREDIT	
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	\$185.00 for the first monitoring well \$185.00 - 10% <\$18.50> =	x \$166.50 \$
Permit for Well Maintenance Inspection (Valid for three years)	\$100.00 for first well maintenance inspection \$100.00 - 10% <\$10.00> =	1 x \$ 90.00 \$ 90.00
Each Additional New Well	\$160.00 for each additional well installation \$160.00 - 10% <\$16.00> = \$ 30.00 for each additional well maintenance inspection	2 x \$144.00 \$ 288.00 2 x \$ 27.00 \$ 54.00
Permit for Borings Only (CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)	\$ 30.00 - 10% <\$ 3.00> = \$185.00 for the first boring \$185.00 - 10% <\$18.50> = \$ 50.00 for each additional boring \$ 50.00 - 10% <\$ 5.00> =	x \$166.50 \$ x \$ 45.00 \$
Permit for Well Destructions Only	\$185.00 for the first destruction \$185.00 – 10% <\$18.50> = \$120.00 for each additional destruction \$120.00 – 10% <\$12.00> =	x \$166.50 \$ x \$108.00 \$
Permit for any Combination of Well Installations, Borings, & Destructions (except UST backfill permit) Permit for any Combination of Well Installations, Borings, & Destructions (except UST backfill permit)	The first activity will be \$185.00. \$185.00 - 10% <\$18.50> = Additional activities will be as follows: \$160.00 for each additional well \$160.00 - 10% <\$16.00> = \$100.00 for first well maintenance inspection \$100.00 - 10% <\$10.00> = \$30.00 for each additional well maintenance inspection \$30.00 - 10% <\$3.00> = \$50.00 for each additional boring \$50.00 - 10% <\$5.00> = \$120.00 for each well destruction \$120.00 - 10% <\$12.00> =	x \$166.50 \$ x \$144.00 \$ x \$ 90.00\$ x \$ 27.00 \$ x \$ 45.00 \$ x \$108.00 \$
	TOTAL COST OF PERMIT	\$ <u>597.</u> 5
Permit for Underground Storage Tank Monitoring System in Backfill (i.e. Enhanced Leak Detection) H:SAM-MWP-9060 (Rev. 10/05)	(Flat Fee) \$320.00 - 10% <\$32.00> =	\$288,00

F. SITE INFORMATION			•	
1. OTE IN ONWATION				
ASSESSOR'S PARCEL NUMBER 321-200-38 a Site Name Poway Landfill Site Address 14900 Poway Road	and 323-	<u>461-25</u> City <u>Poway</u>		Zip <u>92064-</u>
PROPERTY OWNER <u>County of San Diego</u> Phone <u>858-495-5480</u> Mailing Address <u>5201 Ruffin Road, Suite D</u> Zip <u>92123-</u>	Ext.		Fax City <u>San Dieg</u>	<u>o</u> State <u>CA</u>
NUMBER OF WELLS 12-		TYPE OF WELL	S <u>Vapor Wells</u>	<u> </u>
2. ASSESSOR'S PARCEL NUMBER Site Name Site Address	City		Zip	
PROPERTY OWNER Phone Ext Mailing Address	City	Fax	State	Zip
NUMBER OF WELLS		TYPE OF WELL	s	
3. ASSESSOR'S PARCEL NUMBER Site Name Site Address	City		Zip	
PROPERTY OWNER Phone Ext Mailing Address	City	Fax	 State	Zip
NUMBER OF WELLS		TYPE OF WELLS		
4. ASSESSOR'S PARCEL NUMBER Site Name Site Address	City		Zip	a the second sec
PROPERTY OWNER Phone Ext Mailing Address			 tate	
NUMBER OF WELLS		TYPE OF WELLS		

QL	JESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.
1,	If wells are to be destroyed, provide a description of method of destruction NA
2.	What is the purpose of the well/boring investigation?
	□ a. Part of an ongoing site assessment case in which DEH or another government regulator is the lead agency.
	b. Part of a Phase I investigation for property ownership transfer or:
	c. Geotechnical investigation for proposed construction, land stabilization or:
	d. Other:
3.	What procedures will be used to prevent the well/boring from providing an avenue to construction? The monitor wells will be installed imediately after the borings are completed.
4.	What field procedures will be utilized to determine if contamination exists? The cuttings will be screened with a photoionization detector (PID) and a composite sample from the cuttings will be submitted to an analytical laboratory for analysis
5.	What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? Groundwater samples will be submitted to an analytical laboratory
6.	What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? <u>VOCs by EPA Method 8260B</u> , <u>General Chemistry and Metals by EPA Method 6010</u>
7.	How will samples be transported and preserved? Groundwater samples will be sent to lab by curier (with ice perservative).
8.	What sampling methods will be used? Soil cuttings will be stored in 55-gallon drums and one composite soil sample will be collected from all drums.
	Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (http://www/sdcounty.ca.gov/deh/lwg/sam/monitoring_well.html). Yes, The borehole will be reduced from 8" to 4". The 2" well screen and filter pack will be constructed in the 4" borehole, the seal will be constructed in the 8" borehole (See well diagrams).
	Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. No
11.	What procedures will be used to ensure that the drilling equipment will introduce no contamination? <u>Drilling</u>

equipment will be steamed cleaned prior to drilling onsite

12	. What methods will be used to clean sampling equipment? Sampling equipment will be cleaned by three bucket wash method.
13	. What cleaning method will be used to clean casing and screen prior to installation? New PVC pipe will be used which will arrive onsite pre-wrapped



	ven Construction Log	
Site: Poway Landfill	Date: 4/3/2000	5
Well ID: POGW-21	Drilling Method:	Hollow Stem Auger/Rock Coring
Drilling Company: Tri-County Drilling	Boring Depth:	31 feet
Drillers:	Boring Diameter:	6-inches
Geologist: Sean McClain	Well Depth:	30 feet
	3 ft above ground surface	
1	Well Diameter:	2-inches
← 3 ft →	Well Construction:	
Ground Elev.	Material:	Schedule 40 PVC
	Inside Diamte	er: 2-inches
Locking Cap Concrete	3 ft Screen Slot S	ize: 0.02-inches
Tage	Screen Beg.:	15 feet End: 30 feet
Top of Grout 3 ft	Sump Y /	N
Grout Lenuti	Type/Lenth:	NA
7 ft	Filter Pack:	
	Type/Brand:	Montery Sand #3
	Amount Used	i:
	Placement Me	ethod: Direct Pour
Top of Seal 10 ft Seal Length	Seal: Type/Brand:	Enviroplug WYO-Ben
3 ft		
Seal Bottom 12 ft	Amount Used Vol. Fluid Ad	######################################
Top of Sand Above		ACC.
Screen 15 ft Screen	Placement Mo	ethod: Direct pour
7	Grout: Type/Brand:	Grout well WYO-Ben
Screen Leng	th Amount Used	:
Borehole reduced 15 ft	Vol. Fluid Ad	
to 4-inches Filter Pack		ethod: <u>Tremmie</u>
Length	Well Completion:	
		/ Below Grade
	Guard Posts?	
	Pad Size:	3-foot diameter ize: 12-inch steel cover
Well Depth 30 ft	Cover Type/S Comments:	ize. 12-nich steer cover
Boring Depth 31 ft 2-inches	<u> </u>	
Well Diam.	ologist Signature:	
8 and 4-inches	2000101 DIGITATUTE	
Borehole Diam.		Spinger over



Site: Poway Landfill	Date:	4/3/2006 -			
Well ID: POGW-20	Drilling Method	d: <u>Ho</u>	Hollow Stem Auger/Rock Coring 36 feet		
Drilling Company: Tri-County Drilling	Boring Depth:	36			
Drillers:	Boring Diamete	er: 6-i	nches		
Geologist: Sean McClain	Well Depth:	35 feet			
	3 ft above groun surface	nd			
	Well Diameter:	2-i	nches		
iround Elev.	Well Cons	struction:			
	Mat	erial:	Schedule 40 PVC		
	Insid	de Diamter:	2-inches		
Locking Cap C	Concrete 3 ft Scre	en Slot Size:	0.02-inches		
Top of 3 ft	Scre	en Beg.:	20 feet End: 35 feet		
Top of Grout 3 ft	Sum	p Y/N			
Gro	out Length Type	e/Lenth:	NA		
	12 ft Filter Pack	C.			
	Турс	e/Brand:	Montery Sand #3		
	Amo	ount Used:			
	Place	ement Method:	Direct Pour		
op of Seal 15 ft Seal	Seal:				
		e/Brand:	Enviroplug WYO-Ben		
sal Bottom 18 ft		ount Used:			
at Bottom 1811	2 ft Vol.	Fluid Added:			
C. 1 00 C. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	nd Above Set-u	ıp Time:			
Screen 20 ft	Screen Place Grout:	ement Method:	Direct pour		
	Туре	e/Brand:	Grout well WYO-Ben		
Scro	en Length CAmo	unt Used:			
Borehole reduced		Fluid Added:			
1::::::::::::::::::::::::::::::::::::::	Place	ement Method:	Tremmie		
	Length Well Comp	pletion:			
	18 ft Abov	ve Grade / Below	Grade		
	Guar	d Posts? Y/N			
	Pad S		3-foot diameter		
ell Depth 35 ft	Cove	er Type/Size:	12-inch steel cover		
	Com	ments:			
ring Depth 36 ft					
2-inches					
Well Diam.	C. 1. 1. 0:				
8 and 4-inches	Geologist Signature:				
Borehole Diam					

Ql	JESTIONNAIRE: Please answer all applicable questions completely. For well destructions, completely only #1 below and submit any required supportive documentation.
1.	If wells are to be destroyed, provide a description of method of destruction NA
2.	What is the purpose of the well/boring investigation?
	a. Part of an ongoing site assessment case in which DEH or another government regulator is the lea agency.
	b. Part of a Phase I investigation for property ownership transfer or:
	C. Geotechnical investigation for proposed construction, land stabilization or:
	d. Other:
3.	What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? The monitor wells will be installed imediately after the borings are completed
4.	What field procedures will be utilized to determine if contamination exists? The cuttings will be screened with a photoionization detector (PID) and a composite sample from the cuttings will be submitted to an analytical laboratory for analysis
5.	What procedures will be used to determine whether samples will be sent for laboratory testing or archiving Groundwater samples will be submitted to an analytical laboratory
6.	What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? <u>VOCs by EPA Method 8260B</u> , <u>General Chemistry and Metals by EPA Method 6010</u>
7.	How will samples be transported and preserved? Groundwater samples will be sent to lab by curier (with ice perservative).
8.	What sampling methods will be used? Soil cuttings will be stored in 55-gallon drums and one composite soil sample will be collected from all drums.
9.	Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (http://www/sdcounty.ca.gov/deh/lwg/sam/monitoring well.html).:No
10.	Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. No
11.	What procedures will be used to ensure that the drilling equipment will introduce no contamination? <u>Drilling equipment will be steamed cleaned prior to drilling onsite</u>

bucket wash method.

12. What methods will be used to clean sampling equipment? Sampling equipment will be cleaned by three

13.	What cleaning used which wi	g method will be ill arrive onsite pr	used to clean re-wrapped	casing	and screen	prior to	installation?	New PVC pi	pe will be
		. *				. •			
		•							
			,						
			·					J.	



County of San Diego

GARY W. ERBECK DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH LAND AND WATER QUALITY DIVISION

P.O. BOX 129261, SAN DIEGO, CA 92112-9261 619-338-2222/FAX 619-338-2315/1-800-253-9933 www.sdcounty.ca.gov/deh/lwq RICHARD HAAS ASSISTANT DIRECTOR

46.

PROPERTY OWNER RESPONSIBILITY ACKNOWLEDGEMENT

Proposed locations for subsurface work: Property Address:	Assessor's Parcel Number (APN):
14900 Pausy Rd	321-300-38
Paway, CA	
1. Borry Peter ,0	wner of the property/properties listed above, give my permission to
stated above. (consulti	ng company, contractor) to conduct the following work at the locations
Install monitoring wells E	estroy monitoring wells Drill soil borings
Responsible Party. San Diego County Code, Secti construction or destruction standards. If a monitoring we Party must repair, reconstruct or destroy the monitoring the section of the sect	istalled or an existing well destroyed on this property is defined as the on 67.424, states that: "Monitoring wells shall be maintained to meet rell does not meet construction or destruction standards, the Responsible g well so it meets the standards. The property owner, if different than the set to repair, reconstruct or destroy the monitoring well so it meets the eather necessary actions."
the definition of a monitoring well even though no main	ecause there are construction and destruction standards, is included in ntenance is required. These standards are outlined in the County of San I and the State of California Well Standards Bulletin 74-90.
of Environmental Health in which they have agreed	ofessional) of Coas Souter Coas Made Company) and an (drilling company) have submitted a signed application to the Department to complete the above-stated work according the requirements of the county of San Diego and the State of California pertaining to well/boring
as defined in San Diego County Code, Section 67.42	nal and/or the licensed drilling company should fail in their responsibilities 4, I, as the property owner, must take the necessary actions to repair, he standards if the Responsible Party does not complete the necessary
The scope of work covered by this Acknowledgemer below. If an extension of time beyond one year is reproposed, a new Property Owner Responsibility Agree	nt will expire one year from the date of the property owner's signature quired to complete the proposed drilling activities or additional work is ement will be required.
Property Owner Signature:	Date: 3/29/06
Print Name: BANN Pulven	Title:
Company:	
Mailing Address:	



CITY OF POWAY

ROW NO.	0	6-00	
		•	

<u>12 0 U</u>			
	- ,,	7 1	
Associated Plan No.	Attrhem	dastron	May
Contact Person 500	2 10006	٠ .	- 1- 1- 1

PUBLIC RIGHT-OF-WAY PERMIT	Contact Person Sean MC Jain Address 11305 Ranks Brinardo Rd Son Day (A
APPLICANT PLEASE FILL OUT NUMBERED ITEMS 1-4:	Phone No. (ESE) 674-6559
1. APPLICANT, Con Syntice Consultants other public easements (provide owner, address, and property description of the control	ensions, length, width, and depth): in to Approximately 75' Depth with in the Approximately 75' Depth with into the Assessment of mitigation Civillines
	POWAYCITY PROJECT
4. Contractor Tri- County Drilling Su	
Job superintendent Dave Maske Li	
Address 9631 (Andida Fort	EAD Dima CA 92126
Address 9631 (Andida Fort	pe of License
APPLICANT MUST SUBMIT THE FOLLOWING WITH THE APPLICANT MUST SUBMIT THE FOLLOWING WITH THE APPLICANT OF THE CONTRACTOR OF THE PROPERTY OF THE P	PLICATION:
 Certificate of insurance for worker's compensation and gen naming the City as an additional insured. Detailed and scaled traffic control plan for all phases of wo Detailed construction schedule and clear description of wor Itemized cost estimate (unless fees were previously paid wi All applicable fees and deposits. 	PLICATION: teral liability in the amount of \$ \text{kmillione.} APPROVED rk. k. th an approved plan listed above).

NOTE: Application will not be accepted unless items 1-6 are provided. In some cases, the City will consider a

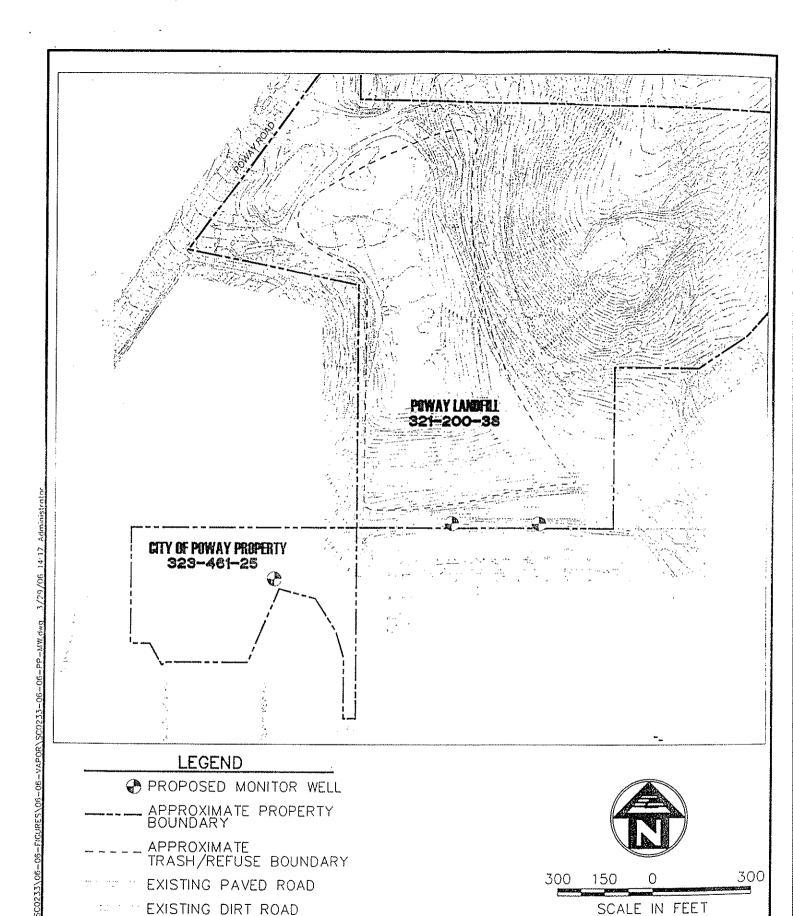
waiver of a part of the requirements of items 1-3 with submittal of a waiver request. (8:30 a.m. and 3:30 p.m. unless otherwise specified).

ACCESS TO SITE IS TO BE VIA POUTE 2 OULY. KX Contractor must call Underground Service Alert at 1-800-422-4133 to have utilities marked out before the preconstruction meeting. After approval of permit, the City Inspector will contact the contractor and set up a time for a pre-construction meeting. City inspector

must have a minimum of 48-hours notification prior to scheduling of pre-construction meeting and construction. Location of all utility cabinets or structures are subject to review, and may require an MDRA to be processed through Development Services Department, Planning division.

In consideration of the granting of this application, the permittee agrees to, and by this instrument, does hold the City of Poway, its elective and appointed officials, officers, agents, and employees harmless from any liability for claims for work done and material furnished upon the property, or any improvements made on the property covered by this permit. Permittee further agrees to hold and save harmless from any claim, cause of action, liability or responsibility for any accident, loss or damage to persons or property caused by the negligence of the Permittee, secured by the submitted certificate of insurance, arising out of the work undertaken pursuant to this permit, or any other permits that may be granted pursuant thereto. I, the applicant, have read and understand the front and back of this application and will abide by its rules and regulations.

Signature of Applicant Sens MClair	Date /- 10-06	
Approved Call Dilana Date 1/18/06	Kangot V. Chen	Date 2/10/2
Traffic Engineer	Senior Civil Engineer	%
PERMIT VALID UNTIL: 500 5006	Inspector Dave R. 22010	Date 2/10/26
APPROVED EXTENSION DATE	By: /	



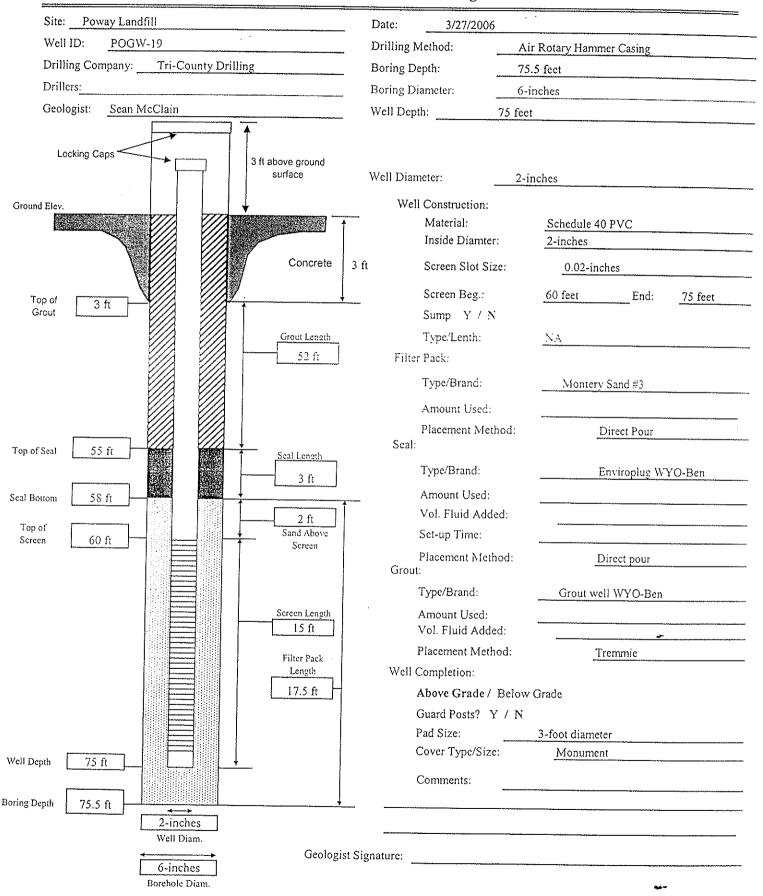
GEOSYNTEC CONSULTANTS

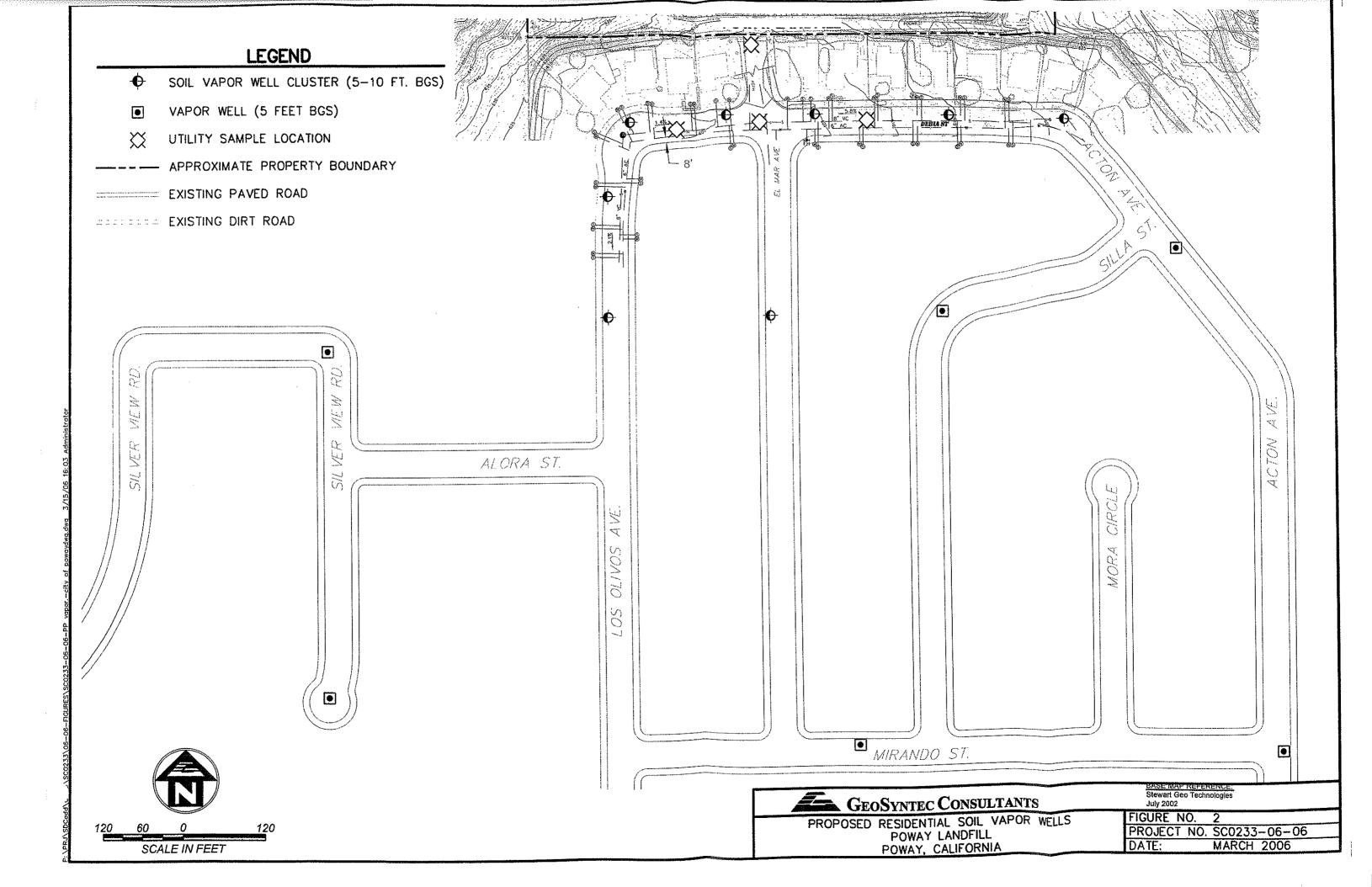
BASE MAP REFERENCE: Stewart Geo Technologies July 2002

PROPOSED MONITOR WELL LOCATIONS
POWAY LANDFILL
POWAY, CALIFORNIA

FIGURE NO. 1 PROJECT NO. SC0233-06-06 DATE: MARCH 2006









Site:	Poway Land	1611		Date: 3/27/2000	6		
Well	ID: POGV	V-20		Drilling Method:	Air Rota	ry Hammer Casing	
Drilling Company: Tri-County Drilling					5 feet		
Drille	ers:			Boring Diameter:	6-inches		
Geol	ogist: <u>Sean I</u>	vicClain		Well Depth:	40 feet		
				3 ft above ground surface			
4		3 ft		Well Diameter:	2-inches		
Ground Elev.				Well Construction:			
			1	Material:		hedule 40 PVC	
		→ 		Inside Diamte	er: <u>2-i</u>	nches	
Locki	ng Cap		Concrete	3 ft Screen Slot S	ize:	0.02-inches	
Top of	·		J	Screen Beg.:	25	feet End:	40 feet
Grout	3 ft		1	Sump Y / i	N		
			Grout Length	Type/Lenth:	NA		
			17.6	Filter Pack:			
				Type/Brand:		Montery Sand #3	
				Amount Used	;		
				Placement Me	thod:	Direct Pour	
Top of Seal	20 ft		Seal Length	Seal:			
			3 ft	Type/Brand:	••••••	Enviroplug W	YO-Ben
Scal Bottom	23 ft		ļ <u> </u>	Amount Used:			
	L		2 ft 1	Vol. Fluid Add	ded:		
Top of Screen	25 ft	-	Sand Above	Set-up Time:			
			Screen	Placement Mei Grout:	thod:	Direct pour	
				Type/Brand:		Grout well WYO-Ben	
			Screen Length	Amount Used:			
			15 ft	Vol. Fluid Add	-		
			Filter Pack	Placement Met	hod:	Tremmie	
			Length	Well Completion:			
			17.5 ft	Above Grade /		e	
				Guard Posts?			
				Pad Size:		ot diameter	
Well Depth	40 ft		<u> </u>	Cover Type/Siz	<u>/e:</u>	12-inch steel cover	
				Comments:			
Boring Depth	40.5 ft						
		2-inches					
		Well Diam.	Genlagie	t Signature:			,
		6-inches	Geologis	CONSTITUTE.			
		Borehole Diam.				**	<u>-</u>



Well Construction Log

Site: Poway Landfill 3/27/2006 Date: Well ID: POGW-21 Drilling Method: Air Rotary Hammer Casing Drilling Company: Tri-County Drilling Boring Depth: 30.5 feet Drillers: Boring Diameter: 6-inches Geologist: Sean McClain Well Depth: 30 feet 3 ft above ground surface Well Diameter: 2-inches Ground Elev. Well Construction: Material: Schedule 40 PVC Inside Diamter: 2-inches Locking Cap Concrete 3 ft Screen Slot Size: 0.02-inches Screen Beg.: 20 feet Top of End: 30 feet 3 ft Grout Sump Y/N Grout Length Type/Lenth: 12 f: Filter Pack: Type/Brand: Montery Sand #3 Amount Used: Placement Method: Direct Pour Seal: Top of Seal 15 ft Seal Length Type/Brand: Enviroplug WYO-Ben 3 ft Seal Bottom 18 ft Amount Used: Vol. Fluid Added: 2 ft Top of Sand Above Set-up Time: 20 ft Screen Screen Placement Method: Direct pour Grout: Type/Brand: Grout well WYO-Ben Screen Length Amount Used: 10 ft Vol. Fluid Added: Placement Method: Tremmie Filter Pack Length Well Completion: 12.5 ft Above Grade / Below Grade Guard Posts? Y / N Pad Size: 3-foot diameter Cover Type/Size: 12-inch steel cover Well Depth 30 ft Comments: Boring Depth 30.5 ft 2-inches Well Diam. Geologist Signature: 6-inches Borehole Diam.



PERMIT #LMON103898 A.P.N. #321-200-38, 323-461-25-00 EST # H86017

COUNTY OF SAN DIEGO DEPARTMENT OF ENVIRONMENTAL HEALTH LAND AND WATER QUALITY DIVISION MONITORING WELL PROGRAM

MONITORING WELL AND BORING CONSTRUCTION AND DESTRUCTION PERMIT

SITE NAME: POWAY LANDFILL

SITE ADDRESS: 14900 POWAY RD. & SUNSET VIEW RD., POWAY CA 92064

PERMIT FOR: INSTALL 3 GROUNDWATER MONITORING WELLS

PERMIT APPROVAL DATE: APRIL 5, 2006 PERMIT EXPIRES ON: AUGUST 3, 2006

RESPONSIBLE PARTY: COUNTY OF SAN DIEGO, LANDFILL MANAGEMENT

PERMIT CONDITIONS:

- 1. Wells must have a minimum 3-foot concrete surface seal. The surface seal shall consist of concrete able to withstand the maximum anticipated load without cracking or deteriorating. The concrete should meet Class A specifications of a minimum 4000-pound compressive strength.
- 2. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, II, E- 4. (http://www.sdcounty.ca.gov/deh/lwq/sam/manual_guidelines.html). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.
- 3. Within 60 days of completing work, submit a well construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.
- 4. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 338-2339.

APPROVED BY:	Then	DATE: <u>04/05/200</u> 6
	KEVÍN HEATON	

NOTIFIED: 04/06/06 V-Missage)
DEH: SAM-9075 (3/05)



COUNTY OF SAN DIEGO

DEPARTMENT OF ENVIRONMENTAL HEALTH 1255 Imperial Avenue, 3rd Floor San Diego, CA 92101

(619)338-2228

RECEIPT NUMBER:

06-0322662

Page 1 of 1

Cashier:

EGAR

APN: 321-200-38-00

DATE ISSUED: 04-APR-2006

PERMIT: LMON T103898

SCOPE: MONITORING WELL/CATHODIC WELL

SITE ADDRESS: NO ADDRESS

SUBDIVISION:

CITY:

PARCEL OWNER: COUNTY OF SAN DIEGO

ADDRESS: PUBLIC AGENCY

CITY/STATE/ZIP: 00000

PERMIT OWNER:

ADDRESS:

CITY/STATE/ZIP:

Fees Calculated 12 Months Back

<u>Date</u>	Fee Code	Description	Paid to Date	This Receipt	<u>Balance Due</u>
)3-APR-2006	6LW25EHO	MONITORING WELL	\$185.00	\$0.00	\$0.00
)3-APR-2006	6LW25-ZCRO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	-\$18.50	\$0.00	\$0.00
)3-APR-2006	6LWMAINEHO	WELL MAINTENANCE FEE	\$100.00	\$0.00	\$0.00
)3-APR-2006	6LWMAINZCC	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	-\$10.00	\$0.00	\$0.00
)3-APR-2006	6LWAMEHO	ADDITIONAL MONITORING WELL	\$319.00	\$1.00	\$0.00
)3-APR-2006	6LWAM-ZCRO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	-\$32.00	\$0.00	\$0.00
)3-APR-2006	6LWMAIXEHC	ADDITIONAL WELL MAINTENANCE FEE	\$60.00	\$0.00	\$0.00
)3-APR-2006	6LWMAIXZCC	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	-\$6.00	\$0.00	\$0.00
-			_		

Totals:

\$1.00 \$0.00

Payment Code

CASH

Description

CASH PAYMENT

<u>Amount</u> S

\$1,00

Tendered: Change: Balance Due:

\$0.00 \$0.00



COUNTY OF SAN DIEGO

DEPARTMENT OF ENVIRONMENTAL HEALTH 1255 Imperial Avenue, 3rd Floor San Diego, CA 92101 (619)338-2228

Page 1 of 1

RECEIPT NUMBER:

06-0322661

· Cashier:

EGARCIA

APN: 321-200-38-00

DATE ISSUED: 04-APR-2006

PERMIT: LMON T103898

SCOPE: MONITORING WELL/CATHODIC WELL

SITE ADDRESS: NO ADDRESS

SUBDIVISION:

CITY:

PARCEL OWNER: COUNTY OF SAN DIEGO

ADDRESS: PUBLIC AGENCY

CITY/STATE/ZIP: 00000

PERMIT OWNER:

ADDRESS:

CITY/STATE/ZIP:

Fees Calculated 12 Months Back

<u>Date</u>	Fee Code	Description	Paid to Date	This Receipt	Balance Due
)3-APR-2006	6LW25EHO	MONITORING WELL	\$0.00	\$185.00	\$0.00
3-APR-2006	6LW25-ZCRO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	\$0.00	-\$18.50	\$0.00
3-APR-2006	6LWMAINEHC	WELL MAINTENANCE FEE	\$0.00	\$100.00	\$0.00
)3-APR-2006	6LWMAINZCO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	\$0.00	-\$10.00	\$0.00
)3-APR-2006	6LWAMEHO	ADDITIONAL MONITORING WELL	\$0.00	\$319.00	\$1.00
)3-APR-2006	6LWAM-ZCRO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	\$0.00	-\$32.00	\$0.00
)3-APR-2006	6LWMAIXEHO	ADDITIONAL WELL MAINTENANCE FEE	\$0.00	\$60.00	\$0.00
G-APR-2006	6LWMAIXZCO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	\$0.00	-\$6.00	\$0.00
			_		
		Totals:		\$597.50	\$1.00

Totals:

Amount

Description CHE... 1063

\$597.50

Tendered: \$597.50 Change: \$0.00

Balance Due:

\$1.00

PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TESTING BY 1

	OFFICE USE ONLY PERMIT LMON # 103898
	SAM CASE Y/N #
ļ	DATE RECEIVED:
ıŀ	FEE PAID:
'n	CHECK#
1	

		p. a. H.	
(The person persons or o	company responsible for the c	on Diego, La Call Marconstruction, maintenance, and destruction	Phone 858-495-5480 of the proposed borings and/or wells.) State CA Zip 92/23 Fax
B. SITE ASSESSMENT	PROJECT NUMBER -	- IF APPLICABLE #	
C. CONSULTING FIRM	GeoSyntec	Consultants	
Mailing Address	0875 Rancho B	Snardo Pd. sk. 300 City San Di ams Registration # 5 Phone 858-674-6559 Ext. 3	190 State A Zip 92/27 1858 (PG) 11 Fax 858-674-6586
D. DRILLING COMPAN	Y TRI-COUNTY DRILL	ING, INC.	C57# <u>547737</u>
Contact Name <u>Tim E</u>	<u>)uddie</u>		
Mailing Address <u>963</u> Phone <u>858-271</u>		City <u>San Diego</u> Fax <u>858-271-0233</u>	State <u>CA</u> Zip <u>92126-</u>
E. CONSTRUCTION IN	FORMATION		
TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED # Groundwater 3 Vadose	CASING Not Applicable Type PVC Gauge SH40 Diameter 2-inch Well Screen Size 0.02 Filter Pack #3	ALS TO BE USED SEAL/BORING BACKFILL Neat Cement Sement & Bentonite Sand-Cement Bentonite Other Borehole diameter 6 m/h Air Rotary Other	PROPOSED CONSTRUCTION Estimated groundwater depth: ft. Concrete
	n Diego and the State o	of California pertaining to well/borin	ation Manual, and with all ordinances and ng construction and destruction. DATE 3-22-66
will certify the design and	I construction or destruc	ction of the well/borings in accorda	complete and accurate well/boring log. I ance with the permit application.
PG/RCE SIGNATURE	Amtell	Dain	DATE 3.29.06

Permit Fees In Effect for July 1, 2005 - June 30, 2006

G. FEES (in effect beginning July 1, 2005, through June 30, 2006)

The County Board of Supervisors authorized a 10% credit, for the Fiscal Year ending June 30, 2006, to be applied to the Department of Environmental Health customers. This credit is being provided to qualified fee-based programs that have contributed to the cost reduction/cost containment/cost avoidance efforts initiated by the Department. This fee adjustment, for the Fiscal Year ending June 30, 2006, is applicable to fees and permits due and/or obtained during this period. The 10% is not applicable to enforcement fees or fees relating to non-compliance of permit regulations.

ACTIVITY	FEE SCHEDULE	AMOUNT
	FEE ONE-TIME FISCAL YEAR 10% CREDIT	
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	\$185.00 for the first monitoring well \$185.00 – 10% <\$18.50> =	1 x \$166.50 \$165.50
Permit for Well Maintenance Inspection (Valid for three years)	\$100.00 for first well maintenance inspection \$100.00 - 10% <\$10.00> =	1 x \$ 90.00 \$ 90.00
·	\$160.00 for each additional well installation \$160.00 - 10% <\$16.00> =	2 x \$144.00 \$ 288.00
Each Additional New Well	\$ 30.00 for each additional well maintenance inspection	<u> </u>
Permit for Borings Only (CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)	\$ 30.00 - 10% <\$ 3.00> = \$185.00 for the first boring \$185.00 - 10% <\$18.50> = \$ 50.00 for each additional boring \$ 50.00 - 10% <\$ 5.00> =	x \$166.50 \$ x \$ 45.00 \$
Permit for Well Destructions Only	\$185.00 for the first destruction \$185.00 – 10% <\$18.50> = \$120.00 for each additional destruction \$120.00 – 10% <\$12.00> =	x \$166.50 \$ x \$108.00 \$
Permit for any Combination of Well Installations, Borings, & Destructions (except UST backfill permit) Permit for any Combination of Well Installations, Borings, & Destructions	The first activity will be \$185.00. \$185.00 – 10% <\$18.50> = Additional activities will be as follows:	1 x \$166.50 \$
(except UST backfill permit)	\$160.00 for each additional well \$160.00 – 10% <\$16.00> = \$100.00 for first well maintenance inspection \$100.00 – 10% <\$10.00> = \$ 30.00 for each additional well maintenance inspection \$ 30.00 – 10% <\$ 3.00> = \$ 50.00 for each additional boring \$ 50.00 – 10% <\$ 5.00> = \$120.00 for each well destruction \$120.00 – 10% <\$12.00> =	x \$144.00 \$
	TOTAL COST OF PERMIT	\$ <i>597.50</i>
Permit for Underground Storage Tank Monitoring System in Backfill (i.e. Enhanced Leak Detection) EH:SAM-MWP-9080 (Rev. 1005)	(Flat Fee) \$320.00 - 10% <\$32.00> =	\$288.00

F. SI	TE INFORMATION			·	
1.	ASSESSOR'S PARCEL NUMBER 321-200-38 a Site Name Poway Landfill	and 323-	4 <u>61-25</u>		
	Site Address 14900 Poway Road		City <u>Poway</u>		Zip <u>92064-</u>
	PROPERTY OWNER County of San Diego Phone 858-495-5480 Mailing Address 5201 Ruffin Road, Suite D Zip 92123-	Ext.		Fax City <u>San Diego</u>	State <u>CA</u>
	NUMBER OF WELLS 12-		TYPE OF WEL	LS <u>Vapor Wells</u>	
2.	ASSESSOR'S PARCEL NUMBER Site Name Site Address	City		Zip	
٠	PROPERTY OWNER Phone Ext Mailing Address	City	Fax	State	Zip
	NUMBER OF WELLS		TYPE OF WEL	LS	:
3.	ASSESSOR'S PARCEL NUMBER Site Name Site Address	City		Zip	
	PROPERTY OWNER Phone Ext Mailing Address	City	Fax	State	Zip
	NUMBER OF WELLS	•	TYPE OF WEL		
4.	ASSESSOR'S PARCEL NUMBER Site Name Site Address	City		Zip	<u>-</u>
	PROPERTY OWNER Phone Ext Mailing Address	City	Fax	State	Zip
	NUMBER OF WELLS		TYPE OF WEL	LS	

QU	ESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.
1.	If wells are to be destroyed, provide a description of method of destruction NA
2.	What is the purpose of the well/boring investigation?
	□ a. Part of an ongoing site assessment case in which DEH or another government regulator is the lead agency.
	b. Part of a Phase I investigation for property ownership transfer or:
	c. Geotechnical investigation for proposed construction, land stabilization or:
	d. Other:
3.	What procedures will be used to prevent the well/boring from providing an avenue to construction? The monitor wells will be installed imediately after the borings are completed
4.	What field procedures will be utilized to determine if contamination exists? The cuttings will be scheened with a photoionization detector (PID) and a composite sample from the cuttings will be submitted to an analytical laboratory for analysis
5.	What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? Groundwater samples will be submitted to an analytical laboratory
6.	What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? <u>VOCs by EPA Method 8260B</u> , <u>General Chemistry and Metals by EPA Method 6010</u>
7.	How will samples be transported and preserved? Groundwater samples will be sent to lab by curier (with ice perservative).
В.	What sampling methods will be used? Soil cuttings will be stored in 55-gallon drums and one composite soi sample will be collected from all drums.
Э.	Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (http://www/sdcounty.ca.gov/deh/lwq/sam/monitoring well.html). :Yes, The borehole will be reduced from 8 to 4". The 2" well screen and filter pack will be constructed in the 4" borehole, the seal will be constructed in the 8" borehole (See well diagrams).
10.	Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. No
11.	What procedures will be used to ensure that the drilling equipment will introduce no contamination? <u>Drilling equipment will be steamed cleaned prior to drilling onsite</u>

is vunat cieanina	والمسافية المسافية	and to along act	na and serves price	to inetallation? Nou	v PVC nine will b
used which wil	method will be u I arrive onsite pre-	ised to clean cast <u>-wrapped</u>		to installation? <u>New</u>	vitano hibe mili b
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		is.			
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2-inches Well Diam. Geologist Signature: 8 and 4-inches	Site: Poway Landf	ill		Date: 4/3/2006	
Drillers Geologist: Sean McClain Boring Diameter: G-finches Well Depth: 30 feet 3 fr above ground surface Well Diameter: 2-inches Well Diameter: 2-inches Well Diameter: 2-inches Well Construction: Material: Schedule 40 PVC Inside Diameter: 2-inches Well Construction: Inside Diameter: 2-inches Screen Beg: 15 feet End: 30 feet Sump Y / N Type/Lenth: NA Filter Pack: Type/Brand: Mondery Sand #3 Amount Used: You Flacement Method: Direct Pour Seal: Type/Brand: Enviroplug WYO-Ben Amount Used: You Flacement Method: Seal: Sect-up Time: Placement Method: Grout well WYO-Ben Amount Used: You Flaid Added: Set-up Time: Placement Method: Direct pour Grout Well Ownjetion: Amount Used: You Flaid Added: Placement Method: Trommie Well Completion: Amount Used: You Flaid Added: Placement Method: Trommie Well Completion: Anount Used: You Flaid Added: Placement Method: Trommie Well Completion: Anount Used: You Flaid Added: Placement Method: Trommie Well Completion: Above Grade / Below Grade Guard Posts? Y / N Pad Size: 3-foot diameter Cover Type/Size: 12-inch steel cover Cover Type/Size: 12-inch steel cover Comments: Well Diam. Sand 4-inches	Well ID: POGW	-21		Drilling Method:	Hollow Stem Auger/Rock Coring
Geologist: Sean McClain Well Depth: 30 feet 3 faxone ground surface Well Diameter: 2-inches Well Construction: Material: Schedule 40 PVC Inside Diameter: 2-inches Well Construction: Material: Schedule 40 PVC Inside Diameter: 2-inches Screen Beg: 15 feet End: 30 feet Sump Y / N Type/Lenth: NA Filter Pack: Type/Brand: Montery Sand #3 Amount Used: Placement Method: Direct Pour Scal: Top of Seal 10 ft Serven Serven 15 ft Serven Herborn Serven Well Direct Pour Serven Used: Vol. Pluid Added: Set-up Time: Placement Method: Direct pour Grout: Type/Brand: Grout well WYO-Ben Amount Used: Vol. Pluid Added: Placement Method: Direct pour Grout: Type/Brand: Grout well WYO-Ben Amount Used: Vol. Pluid Added: Placement Method: Direct pour Grout: Type/Brand: Grout well WYO-Ben Amount Used: Vol. Fluid Added: Placement Method: Trommie Well Completion: Above Grade / Below Grade Well Daine. Well Daine. Serven Serven Used: Vol. Fluid Added: Placement Method: Trommie Well Completion: 15 ft Serven Used: Vol. Fluid Added: Placement Method: Trommie Well Completion: 15 ft Serven Used: Vol. Fluid Added: Placement Method: Trommie Well Completion: 15 ft Serven Used: Vol. Fluid Added: Placement Method: Trommie Well Completion: 15 ft Serven Used: Vol. Fluid Added: Placement Method: Trommie Well Completion: 15 ft Serven Used: Vol. Fluid Added: Placement Method: Trommie Well Completion: 15 ft Serven Used: Vol. Fluid Added: Placement Method: Trommie Well Completion: 15 ft Serven Used: Vol. Fluid Added: Placement Method: Trommie Well Completion: 15 ft Serven Used: Vol. Fluid Added: Placement Method: Trommie Well Completion: 15 ft Serven Used: Vol. Fluid Added: Placement Method: Trommie Well Completion: 15 ft Serven Used: Vol. Fluid Added: Vol. F	Drilling Company:	Tri-County Drilling		Boring Depth:	31 feet
Geologist: Sean McClain Well Depth: 30 feet 3 ft above ground surface Well Diameter: 2-inches Well Construction: Material: Schedule 40 PVC Inside Diameter: 2-inches Well Construction: Material: Schedule 40 PVC Inside Diameter: 2-inches Screen Beg: 35 feet End: 30 feet Sump Y / N Type/Bendt: NA Filter Pack: Filter Pack: Filter Pack: Section 15 ft Sect	Drillers:			Boring Diameter:	6-inches
Well Diameter: 2-inches Well Construction: Well Construction: Well Construction: Material: Schedule 40 PVC Inside Diameter: 2-inches Screen Beg: 15 feet End: 30 feet Sump Y / N Type/Lenth: NA Filter Pack: Type/Brand: Montery Sand #3 Amount Used: Placement Method: Direct Pour Seal Serien Seri				Well Depth:	30 feet
Well Construction: Material: Locking Cap Concrete Top of Grout Crout Length Top of Seal T					
Well Construction: Material: Locking Cap Concrete Top of Grout Top of Grout Length Top of Seal Top of	4	3 ft		Well Diameter:	2-inches
Locking Cap Concrete Top of Grout Laneth Top of Grout Laneth Top of Seal 10 ft Seal Laneth Top of Serven Laneth Top of Serven 15 ft	Ground Elev.		<u> </u>		
Locking Cap Top of Grout Top of Seal Top		- Andrews of the second	<u> </u>		
Screen Beg.: 15 feet End: 30 feet Sump Y / N Type/Lenth: NA Filter Pack: Type/Brand: Montery Sand #3 Amount Used: Placement Method: Direct Pour Seal: Bottom 12 ft Top of Seal 10 ft Seal Houten 12 ft Top of Seal 15 ft Seal: Seal: Enviroplug WYO-Ben Amount Used: Vol. Fluid Added: Set-up Time: Placement Method: Grout: Type/Brand: Grout well WYO-Ben Screen Length Screen Length 15 ft Screen Length 18 ft Well Depth 30 ft Vell Dam. Geologist Signature: Geologist Signature:		→		•	
Sump Y / N Type/Lenth: NA Type/Brand: Montery Sand #3 Amount Used: Placement Method: Direct Pour Seal: Top of Seal Top of Serven 15 ft Borehole reduced to 4-inches Well Depth 30 ft Well Depth 30 ft 2-inches Well Depth 30 ft 2-inches Well Diam. Geologist Signature: 8 and 4-inches Geologist Signature: 8 and 4-inches	Locking Cap	Coi	ncrete 3 fi	t Screen Slot Si	ize: 0.02-inches
Sump Y / N Type/Lenth: NA Type/Brand: Montery Sand #3 Amount Used: Placement Method: Direct Pour Seal: Type/Brand: Enviroplug WYO-Ben. Amount Used: Vol. Fluid Added: Serven 15 ft Sand Above Serven Method: Direct pour Serven Method: Serven Method: Serven Method: Serven Method: Orout: Type/Brand: Grout well WYO-Ben. Amount Used: Vol. Fluid Added: Serven Method: Direct pour Grout: Type/Brand: Grout well WYO-Ben. Amount Used: Vol. Fluid Added: Vol. Fluid Added: Vol. Fluid Added: Vol. Fluid Added: Placement Method: Tremmie Well Completion: Above Grade / Below Grade Guard Posts? Y / N Pad Size: 3-foot diameter Cover Type/Size: 12-inch steel cover Comments: Geologist Signature: 8 and 4-inches	Top of			Screen Beg.:	15 feet End: 30 feet
Top of Seal 10 ft Seal Length Serven Length Screen Length Serven Length Length To 4-inches Well Depth 30 ft Length Seal Length Seal Length Seal Signature: Top of Seal 10 ft Seal Length Serven Serven Serven Serven Serven Seal Length			· · · · · · · · · · · · · · · · · · ·	Sump Y / I	N
Type/Brand: Montery Sand #3 Amount Used: Placement Method: Direct Pour Seal Length Type/Brand: Enviroplug WYO-Ben Amount Used: Vol. Fluid Added: Set-up Time: Sereen Length Sereen Length 15 ft Screen Length 15 ft Screen Length 15 ft Montery Sand #3 Amount Used: Vol. Fluid Added: Set-up Time: Placement Method: Direct pour Grout: Type/Brand: Grout well WYO-Ben Amount Used: Vol. Fluid Added: Placement Method: Tremmie Well Completion: Well Completion: Well Completion: Above Grade / Below Grade Guard Posts? Y / N Pad Size: 3-foot diameter Cover Type/Size: 12-inch steel cover Comments: Boring Depth 31 ft 2-inches Well Diam. Geologist Signature: Sand 4-inches		Grout	Length	Type/Lenth:	NA
Amount Used: Placement Method: Seal: Top of Seal 10 ft Seal Length Top of Seal 12 ft Sand Above Screen 15 ft Borehole reduced to 4-inches Well Depth Well Depth Boring Depth 30 ft 2 inches Well Diam. Geologist Signature: Read Seal: Placement Method: Seal: Type/Brand: Amount Used: Vol. Fluid Added: Set-up Time: Placement Method: Direct Pour Screen Length Vol. Fluid Added: Placement Method: Tremmie Well Completion: Above Grade / Below Grade Guard Posts? Y / N Pad Size: Cover Type/Size: 12-inch steel cover Comments:			7 ft	Filter Pack:	
Placement Method: Direct Pour Seal: Top of Seal 10 ft 3 ft Type/Brand: Enviroplug WYO-Ben Amount Used: Vol. Fluid Added: Set-up Time: Placement Method: Direct pour Grout: Type/Brand: Grout well WYO-Ben Amount Used: Vol. Fluid Added: Type/Brand: Grout well WYO-Ben Amount Used: Vol. Fluid Added: Placement Method: Tremmie Well Completion: Above Grade / Below Grade Guard Posts? Y / N Pad Size: 3-foot diameter Cover Type/Size: 12-inch steel cover Comments: Boring Depth 2-inches Well Diam. Geologist Signature: Seal: Type/Brand: Grout well WYO-Ben Amount Used: Vol. Fluid Added: Placement Method: Tremmie Well Completion: Above Grade / Below Grade Guard Posts? Y / N Pad Size: 3-foot diameter Cover Type/Size: 12-inch steel cover Comments:				Type/Brand:	Montery Sand #3
Seal Lenoth Seal Bottom 12 ft Top of Screen 15 ft Borehole reduced to 4-inches Well Depth Well Depth Boring Depth 2-inches Well Direct pour Screen Length 18 ft Seal Lenoth Type/Brand: Seal: Type/Brand: Seal: Type/Brand: Seal: Type/Brand: Seal: Type/Brand: Seal: Vol. Fluid Added: Set-up Time: Placement Method: Type/Brand: Type/Brand: Seal: Well Added: Placement Method: Filter Pack Length Above Grade / Below Grade Guard Posts? Y / N Pad Size: Cover Type/Size: 12-inch steel cover Comments: Geologist Signature: 8 and 4-inches				Amount Used:	:
Seal Bottom 10 ft				Placement Me	othod: Direct Pour
Seal Bottom 12 ft Top of Screen 15 ft Borehole reduced to 4-inches Well Depth 30 ft Geologist Signature: Seal Bottom 12 ft Amount Used: Vol. Fluid Added: Set-up Time: Placement Method: Grout: Type/Brand: Grout well WYO-Ben Amount Used: Vol. Fluid Added: Placement Method: Tremmie Well Completion: Above Grade / Below Grade Guard Posts? Y / N Pad Size: Cover Type/Size: 12-inch steel cover Comments: Band 4-inches	Top of Scal 10 ft	Saul 1	an ath	Seal:	
Seal Bottom 12 ft Top of Screen 15 ft Borehole reduced to 4-inches Well Depth Well Depth 30 ft Vol. Fluid Added: Set-up Time: Placement Method: Type/Brand: Grout well WYO-Ben Amount Used: Vol. Fluid Added: Placement Method: Tremmie Well Completion: Above Grade / Below Grade Guard Posts? Y / N Pad Size: Geologist Signature: Boring Depth 31 ft 2-inches Well Diam. Geologist Signature: Sand 4-inches	1011			Type/Brand:	Enviroplug WYO-Ben
Top of Screen 15 ft	Saal Postom 12 ft		5 IL	Amount Used:	;
Screen Length Borehole reduced to 4-inches Well Depth 30 ft Well Depth 30 ft Grout well WYO-Ben Screen Length 15 ft Vol. Fluid Added: Placement Method: Placement Method: Tremmie Well Completion: Above Grade / Below Grade Guard Posts? Y / N Pad Size: Cover Type/Size: 12-inch steel cover Comments: Geologist Signature: Geologist Signature:	Scar Bottom 12 R		2 ft	Vol. Fluid Ad	ded:
Borehole reduced to 4-inches Boring Depth 30 ft Well Depth 30 ft Geologist Signature: Placement Method: Direct pour Grout: Type/Brand: Grout well WYO-Ben Amount Used: Vol. Fluid Added: Placement Method: Tremmie Well Completion: Above Grade / Below Grade Guard Posts? Y / N Pad Size: 3-foot diameter Cover Type/Size: 12-inch steel cover Comments: Geologist Signature:		Sand	l Above	Set-up Time:	
Borehole reduced to 4-inches Screen Length Is ft Vol. Fluid Added: Placement Method: Placement Method: Well Completion: Above Grade / Below Grade Guard Posts? Y / N Pad Size: 3-foot diameter Cover Type/Size: 12-inch steel cover Comments: Boring Depth 30 ft Geologist Signature: 8 and 4-inches	Jordan E. I.S. I.	Sc	creen		ethod: Direct pour
Borehole reduced to 4-inches Solution Filter Pack Placement Method: Tremmie	/	*		Type/Brand:	Grout well WYO-Ben
Borehole reduced to 4-inches Filter Pack Length Well Completion: Above Grade / Below Grade Guard Posts? Y / N Pad Size: 3-foot diameter Cover Type/Size: 12-inch steel cover Comments: Boring Depth 31 ft 2-inches Well Diam. Geologist Signature: 8 and 4-inches		[-] - [-] -			
to 4-inches Filter Pack Length Length Well Completion: Above Grade / Below Grade Guard Posts? Y / N Pad Size: 3-foot diameter Cover Type/Size: 12-inch steel cover Comments: Boring Depth 31 ft 2-inches Well Diam. Geologist Signature: 8 and 4-inches	Borehole reduced		<u>5 ft</u>		
Well Depth 30 ft Boring Depth 31 ft 2-inches Well Diam. Geologist Signature: 8 and 4-inches		1,			thod: <u>Tremmie</u>
Well Depth 30 ft Boring Depth 3.1 ft 2-inches Well Diam. Geologist Signature: 8 and 4-inches				•	
Well Depth 30 ft Comments: Boring Depth 31 ft 2-inches Well Diam. Geologist Signature: 8 and 4-inches			8 ft		
Well Depth 30 ft Cover Type/Size: 12-inch steel cover Comments: Boring Depth 31 ft 2-inches Well Diam. Geologist Signature: 8 and 4-inches					
Well Depth 30 ft Comments: Boring Depth 31 ft 2-inches Well Diam. Geologist Signature: 8 and 4-inches					
Boring Depth 31 ft 2-inches Well Diam. Geologist Signature: 8 and 4-inches	Well Depth 30 ft	- ■ ↓			12-mon steet cover
2-inches Well Diam. Geologist Signature: 8 and 4-inches				Comments:	
Well Diam. Geologist Signature: 8 and 4-inches	Boring Depth 31 ft			 	
Geologist Signature: 8 and 4-inches	· 	· · · · · · · · · · · · · · · · · · ·			
8 and 4-inches		well Diam.	Geologist S	Signature:	
		8 and 4-inches Borehole Diam.	~		



Site: Poway Landfill	Date:	4/3/2006	
Well ID: POGW-20	Drilling N	Method:	Hollow Stem Auger/Rock Coring
Drilling Company: Tri-County Drilling	Boring De	epth:	36 feet
Drillers:	Boring Di	iameter:	6-inches
Geologist: Sean McClain		th:3	35 feet
	3 ft above surfa		
	Well Diar	neter:	2-inches
→ 3 ft	Wel	ll Construction:	
and Elev.		Material:	Schedule 40 PVC
	f	Inside Diamter:	: 2-inches
Locking Cap Concret	te 3 ft	Screen Slot Siz	ze: 0.02-inches
		Screen Beg.:	20 feet End: 35 feet
Top of 3 ft		Sump Y/N	
Grout Leng	th	Type/Lenth:	NA
12 ft		er Pack:	
	·····	Type/Brand:	Montery Sand #3
		Amount Used:	
		Placement Met	
	Sea		
of Scal 15 ft Scal Length	1	Type/Brand:	Enviroplug WYO-Ben
		Amount Used:	
Bottom 18 ft 2 ft		Vol. Fluid Add	ded:
op of Sand Abo		Set-up Time:	
creen 20 ft Screen	Gro	Placement Met	thod: Direct pour
		Type/Brand:	Grout well WYO-Ben
Screen Len		Amount Used: Vol. Fluid Add	
Borehole reduced Filter Pac	ok	Placement Met	thod: Tremmie
Length		ll Completion:	
18 ft		Above Grade /	Below Grade
		Guard Posts?	
		Pad Size:	3-foot diameter
Depth 35 ft		Cover Type/Siz	ize: 12-inch steel cover
п Бериг [Comments:	
ng Depth 36 ft			
2-inches Well Diam.			
<u>←</u> G	eologist Signature:		
8 and 4-inches Borchole Diam.			**-

QU	ESTIONNAIRE: Please answer all applicable questions completely. For well destructions, complete only #1 below and submit any required supportive documentation.
1.	If wells are to be destroyed, provide a description of method of destruction NA
2.	What is the purpose of the well/boring investigation?
	a. Part of an ongoing site assessment case in which DEH or another government regulator is the lead agency.
	b. Part of a Phase I investigation for property ownership transfer or:
	C. Geotechnical investigation for proposed construction, land stabilization or:
	d. Other:
3.	What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? The monitor wells will be installed imediately after the borings are completed
4.	What field procedures will be utilized to determine if contamination exists? The cuttings will be screened with a photoionization detector (PID) and a composite sample from the cuttings will be submitted to an analytical laboratory for analysis
5.	What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? Groundwater samples will be submitted to an analytical laboratory
6.	What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? <u>VOCs by EPA Method 8260B</u> , <u>General Chemistry and Metals by EPA Method 6010</u>
7.	How will samples be transported and preserved? Groundwater samples will be sent to lab by curier (with ice perservative).
8.	What sampling methods will be used? Soil cuttings will be stored in 55-gallon drums and one composite soil sample will be collected from all drums.
9.	Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (http://www/sdcounty.ca.gov/deh/lwg/sam/monitoring_well.html). :No
10.	Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. No
11.	What procedures will be used to ensure that the drilling equipment will introduce no contamination? <u>Drilling equipment will be steamed cleaned prior to drilling onsite</u>
12.	What methods will be used to clean sampling equipment? <u>Sampling equipment will be cleaned by three bucket wash method.</u>





County of San Diego

GARY W. ERBECK DIRECTOR

DEPARTMENT OF ENVIRONMENTAL HEALTH LAND AND WATER QUALITY DIVISION

RICHARD HAAS ASSISTANT DIRECTOR

P.O. BOX 129261, SAN DIEGO, CA 92112-9261 619-338-2222/FAX 619-338-2315/1-800-253-9933 www.sdcounty.ca.gov/deh/lwq

PROPERTY OWNER RESPONSIBILITY ACKNOWLEDGEMENT

Proposed locations for subsurface work: Property Address:	Assessor's Parcel Number (APN):
14900 Panny Ad	321-300-38
Poway, CA	
	of the property/properties listed above, give my permission to mpany, contractor) to conduct the following work at the locations
Install monitoring wells Destroy	monitoring wells Drill soil borings
Responsible Party. San Diego County Code, Section 67. construction or destruction standards. If a monitoring well doe Party must repair, reconstruct or destroy the monitoring well:	d or an existing well destroyed on this property is defined as the 424, states that: "Monitoring wells shall be maintained to mee as not meet construction or destruction standards, the Responsible so it meets the standards. The property owner, if different than the pair, reconstruct or destroy the monitoring well so it meets the necessary actions."
A soil boring is used specifically to sample soil and, because the definition of a monitoring well even though no maintenan Diego Site Assessment and Mitigation (SAM) Manual and the	e there are construction and destruction standards, is included in ice is required. These standards are outlined in the County of San he State of California Well Standards Bulletin 74-90.
of Environmental Health in which they have agreed to com	onal) of <u>Cea Surfer</u> <u>Core Mark</u> onsulting company) and an g company) have submitted a signed application to the Department applete the above-stated work according the requirements of the of San Diego and the State of California pertaining to well/boring
as defined in San Diego County Code, Section 67,424, I, as	l/or the licensed drilling company should fail in their responsibilities s the property owner, must take the necessary actions to repair, ndards if the Responsible Party does not complete the necessary
below. If an extension of time beyond one year is required proposed, a new Property Owner Responsibility Agreement	expire one year from the date of the property owner's signature to complete the proposed drilling activities or additional work is twill be required.
Property Owner Signature:	Date: 3/29/06
Print Name: BARRY Pulver	Title:
Company:	
Mailing Address:	

CTY OF POWA

APPROVED EXTENSION DATE

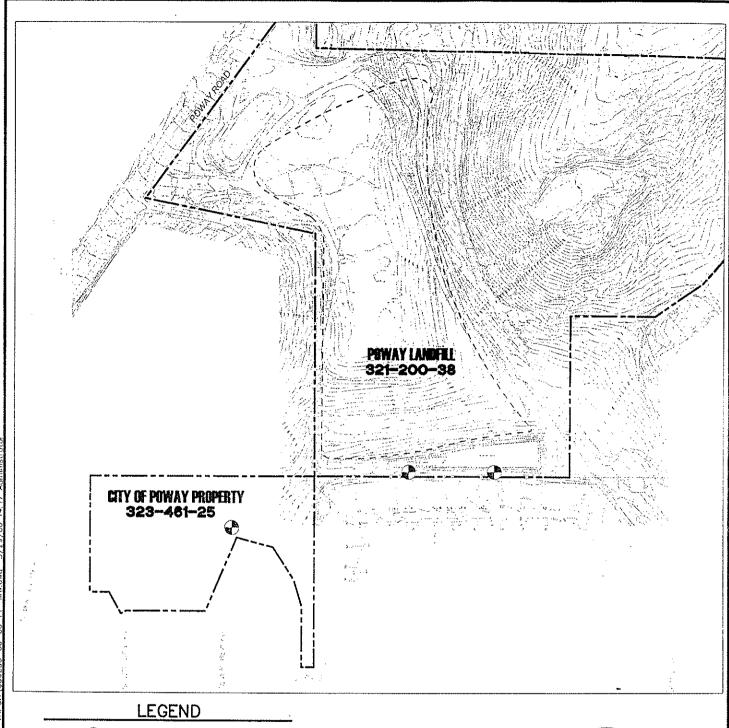
CITY OF POWAY

ROW NO.	0	6-	09	
		\sim	-	

,	- ·				
1			4	1	1
Associated Plan No	<u>ہے ہے کہ _</u>	Attrhen	das	1160	Mor
		MClai			, , ,

PUBLIC RIGHT-OF-WAY PERMIT	Address 11305 Parks Bringer Rd 5
APPLICANT PLEASE FILL OUT NUMBERED ITEMS 1-4:	Phone No. (858) 674-6559
other public easements (provide owner, address, and property described to South wish and property described to South wish and property described to South wish and sproximate din One excoordinates manifor well: 6" has manuscraft facish, recording to South Williams	iption): Set Corner of Davey Lendfill mensions, length, width, and depth): Cir to approximately 75' Depth with Disto life assessment a mitiration Guillians
·	I PÓWAYCITY PROJECT
	ubcontractors None
Job superintendent Dave Maske I	icense No. <u>547737</u>
Address 9631 CAndida Front	- GED Diena, CA 92126
Contractor's License NoT	ype of License
 APPLICANT MUST SUBMIT THE FOLLOWING WITH THE All Copy of the Contractor's license (Type A required). Certificate of insurance for worker's compensation and genaming the City as an additional insured. Detailed and scaled traffic control plan for all phases of w Detailed construction schedule and clear description of w Itemized cost estimate (unless fees were previously paid w All applicable fees and deposits. NOTE: Application will not be accepted unless items 1-6 ar waiver of a part of the requirements of items 1-3 w	eneral liability in the amount of \$ kmillione_APPROVED ork. ork. ork. with an approved plan listed above).
Hours of work <u>E30 Am</u> <u>330 pm</u> (8:30 ACCES TO SITE IS TO SE VIA 200TE Contractor must call Underground Service Alert at 1-800-422-413 After approval of permit, the City Inspector will contact the contract must have a minimum of 48-hours notification prior to scheduling of	
elective and appointed officials, officers, agents, and employees have furnished upon the property, or any improvements made on the property have harmless from any claim, cause of action, liability or responsibly the negligence of the Permittee, secured by the submitted certification.	agrees to, and by this instrument, does hold the City of Poway, its narmless from any liability for claims for work done and material operty covered by this permit. Permittee further agrees to hold and sility for any accident, loss or damage to persons or property caused ficate of insurance, arising out of the work undertaken pursuant to areto. I, the applicant, have read and understand the front and ons.
Signature of Applicant Seen Millian	Date /-10-06
Approved Call Division Date 1/18/06 Traffic Engineer	Kangot () (Gassa Date 2/10/20) Senior Civil Engineer
PERMIT VALID UNTIL: 5006	Inspector Dave Rezulo Date 3/10/06

By:_



PROPOSED MONITOR WELL

APPROXIMATE PROPERTY BOUNDARY

_ APPROXIMATE TRASH/REFUSE BOUNDARY

EXISTING PAVED ROAD

EXISTING DIRT ROAD



300 150 0

300

SCALE IN FEET



GEOSYNTEC CONSULTANTS

PROPOSED MONITOR WELL LOCATIONS
POWAY LANDFILL
POWAY, CALIFORNIA

BASE MAP REFERENCE:
Stewart Geo Technologies
July 2002
FIGURE NO. 1

PROJECT NO. SC0233-06-06 DATE: MARCH 2006



Site: Poway Landfill	Date: 3/27/2006	
Well ID: POGW-19	Drilling Method:	Air Rotary Hammer Casing
Drilling Company: Tri-County Drilling	Boring Depth:	75.5 feet
Drillers:	Boring Diameter:	6-inches
Geologist: Sean McClain	Well Depth:	75 feet
1		
Locking Caps 3 ft above ground surface	Well Diameter:	2-inches
·	Well Construction:	
Ground Elev.	↑ Material:	Schedule 40 PVC
	Inside Diamte	er: 2-inches
Concrete	3 ft Screen Slot S	ize: 0.02-inches
	Screen Beg.:	60 feet End: 75 feet
Top of 3 ft	Sump Y / 1	N
Grout Length	Type/Lenth:	NA
52 ft	Filter Pack:	
	— Type/Brand:	Montery Sand #3
	Amount Used	·
	Placement Mo	
	Seal:	
Top of Seal 55 ft Seal Length 3 ft	Type/Brand:	Enviroplug WYO-Ben
	Amount Used	l:
Scal Bottom 58 ft 2 ft	☐ Vol. Fluid Ad	ided:
Top of Sand Above	Set-up Time:	
Screen 60 ft Screen	Placement Mo Grout:	ethod: Direct pour
	Type/Brand:	Grout well WYO-Ben
Screen Lengt		
15 ft	_	
Filter Pack		ethod: <u>Tremmie</u>
Length	Well Completion:	
17.5 ft	Above Grade	e / Below Grade
	Guard Posts?	
	Pad Size:	3-foot diameter
Well Depth 75 ft	Cover Type/S	Size: Monument
	Comments:	
Boring Depth 75.5 ft		
2-inches		:
Well Diam. Geo	logist Signature:	
6-inches		
Borehole Diam.		₩



Site: Poway La	andfill		Date:	3/27/2006	
Well ID: PO	GW-20		Drilling l	Method:	Air Rotary Hammer Casing
Drilling Company	: Tri-County Drilling		Boring D	epth:	40.5 feet
Drillers:			Boring D	iameter:	6-inches
Geologist: Sea	n McClain		Well Dep	th: 40 i	feet
			3 ft above surf		
1.		1	Well Dia	neter:	2-inches
Ground Elev.	3 ft		Wei	ll Construction:	
Ground Elevi				Material:	Schedule 40 PVC
				Inside Diamter:	2-inches
Locking Cap		Concrete	3 ft	Screen Slot Size:	0.02-inches
T			<u> </u>	Screen Beg.:	25 feet End: 40 feet
Top of 3 ft			·	Sump Y / N	
		Grout Length		Type/Lenth:	NA
		17 ft	Filto	er Pack:	
				Type/Brand:	Montery Sand #3
				Amount Used:	•
				Placement Method:	: Direct Pour
Top of Seal 20 ft		Seal Length	Seal	:	
·		3 ft		Type/Brand:	Enviroplug WYO-Ben
Seal Bottom 23 ft				Amount Used:	
	'	2 ft		Vol. Fluid Added:	
Top of Screen 25 ft]	Sand Above Screen		Set-up Time:	
	'	Screen	Grou	Placement Method:	Direct pour
			0100	Type/Brand:	Grout well WYO-Ben
		Screen Length		Amount Used:	Gloud wen w 10-Bell
		15 ft		Vol. Fluid Added:	-
		Filter Pack		Placement Method:	Tremmie
		Length	Well	Completion:	
		17.5 ft	1	Above Grade / Bel	ow Grade
				Guard Posts? Y /	N
				Pad Size:	3-foot diameter
Well Depth 40 ft				Cover Type/Size:	12-inch steel cover
				Comments:	
Boring Depth 40.5 ft			<u> </u>		
	2-inches				
	Well Diam.	Genlag	gist Signature:		
	6-inches	300108	,		
	Borehole Diam.				n µ¢∾



Well Construction Log

Site: Poway Landfill	Date:	3/27/2006	
Well ID: POGW-21	Drillin	ng Method:	Air Rotary Hammer Casing
Drilling Company: Tri-County Drilling		g Depth:	30.5 feet
Drillers:		g Diameter:	6-inches
Geologist: Sean McClain) feet
		-	, 1000
		bove ground surface	
₹ 3 ft	Well I	Diameter:	2-inches
nd Elev.		Well Construction:	·
Compt Service Compt		Material:	Schedule 40 PVC
		Inside Diamter:	2-inches
Locking Cap Co	oncrete 3 ft	Screen Slot Size:	0.02-inches
Top of 2.5	Į.	Screen Beg.:	20 feet End: 30 feet
Grout 3 ft		Sump Y / N	307000
Grou	t Length	Type/Lenth:	NA
	12 ft F	ilter Pack:	· · · · · · · · · · · · · · · · · · ·
		Type/Brand:	Montery Sand #3
		Amount Used:	
		Placement Method	d: Direct Pour
of Scal 15 ft Seal I	S	cal:	2110011041
Sear L	ength 3 ft	Type/Brand:	Enviroplug WYO-Ben
Bottom 18 ft		Amount Used:	
	2 ft	Vol. Fluid Added:	
oon Ullitt Italian I	Above	Set-up Time:	
		Placement Method	l: Direct pour
	ļ	Type/Brand:	Grout well WYO-Ben
Screen	n Length	Amount Used:	Court for it I Could
[9:389:38]	O ft	Vol. Fluid Added:	-
	r Pack	Placement Method	**************************************
\$119314 1431434		ell Completion:	
12	.5 ft	Above Grade / Be	low Grade
		Guard Posts? Y /	
		Pad Size:	3-foot diameter
Depth 30 ft		Cover Type/Size:	12-inch steel cover
~P''' [Comments:	
Depth 30.5 ft			
Depth 30.5 ft 2-inches			
Well Diam.			
4	Geologist Signature	::	
6-inches Borchole Diam.			

Boring



PERMIT #LMON103910 A.P.N. #321-200-38 EST #H86017

COUNTY OF SAN DIEGO DEPARTMENT OF ENVIRONMENTAL HEALTH LAND AND WATER QUALITY DIVISION MONITORING WELL PROGRAM

MONITORING WELL CONSTRUCTION PERMIT

SITE NAME: POWAY LANDFILL

SITE ADDRESS: OFF-SITE ADJACENT TO 14900POWAY RD. SAN DIEGO CA 92064

PERMIT TO: INSTALL 22 SOIL VAPOR CLUSTER WELLS

PERMIT APPROVAL DATE: APRIL 6, 2006 PERMIT EXPIRES ON: AUGUST 4, 2006

RESPONSIBLE PARTY: COUNTY OF SAN DIEGO LANDFILL MGMT.

PERMIT CONDITIONS:

- 1. Wells must have a **minimum 3-foot concrete surface seal**. The surface seal shall consist of concrete able to withstand the maximum anticipated load without cracking or deteriorating. The concrete should meet Class A specifications of a minimum 4000-pound compressive strength.
- 2. All water and soil resulting from the activities covered by this permit must be managed, stored and disposed of as specified in the SAM Manual in Section 5, E- 4. (http://www.sdcounty.ca.gov/deh/lwg/sam/manual_guidelines.html). In addition, drill cuttings must be properly handled and disposed in compliance with the Stormwater Best Management Practices of the local jurisdiction.
- 3. Within 60 days of completing work, submit a well construction report, including all well and/or boring logs and laboratory data to the Well Permit Desk. This report must include all items required by the SAM Manual, Section 5, Pages 6 & 7.
- 4. This office must be given 48-hour notice of any drilling activity on this site and advanced notification of drilling cancellation. Please contact the Well Permit Desk at 619) 338-2339.

This permit does not constitute approval of a work plan as defined in

	2722 of Article 11 of C.C.R., Title horized release investigations in	23. Work plans are required for San Diego County.
APPROVED BY:	KEVIN HEATON	DATE: <u>4/6/06</u>
	Δ.	

NOTIFIED: 4-7-01 ft.

NOTE:



COUNTY OF SAN DIEGO

DEPARTMENT OF ENVIRONMENTAL HEALTH 1255 Imperial Avenue, 3rd Floor San Diego, CA 92101 (619)338-2228

Page 1 of 1

RECEIPT NUMBER: 06-032

Cashier: EGARCIA

APN: 321-200-38-00

DATE ISSUED: 06-APR-2006

PERMIT: LMON 103910

SCOPE: MONITORING WELL/CATHODIC WELL

SITE ADDRESS: 14900 POWAY RD

SUBDIVISION:

CITY: Poway, CA 92064

PARCEL OWNER: COUNTY OF SAN DIEGO

ADDRESS: PUBLIC AGENCY

CITY/STATE/ZIP:, 00000

PERMIT OWNER:

ADDRESS:

CITY/STATE/ZIP:

^c ees Calculated	112	' Mont	hs i	Back	ί
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<u>Date</u>	Fee Code	Description	Paid to Date	This Receipt	Balance Due
)6-APR-2006	6LW25-ZCRO	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	\$0.00	-\$18.50	\$0.00
)6-APR-2006	6LWAMEHO	ADDITIONAL MONITORING WELL	\$0.00	\$3,360.00	\$0.00
)6-APR-2006	6LWAM-ZCRC	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	\$0.00	-\$336.00	\$0.00
)6-APR-2006	6LWMAIXEHC	ADDITIONAL WELL MAINTENANCE FEE	\$0.00	\$630.00	\$0.00
)6-APR-2006	6LWMAIXZCC	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	\$0.00	-\$63.00	\$0.00
)6-APR-2006	6LWMAINEHC) WELL MAINTENANCE FEE	\$0.00	\$100.00	\$0.00
)6-APR-2006	6LWMAINZCC	FISCAL YEAR 05/06 ONE-TIME 10% CREDIT	\$0.00	-\$10.00	\$0.00
)6-APR-2006	6LW25EHO	MONITORING WELL	\$0.00	\$185.00	\$0.00
		Totals		\$3.847.50	00.02

Totals: \$3,847.50 \$0.00

Payment Code	Description	<u>Am-</u>	ſ
CHECK	1065	\$3,84	7. ov

Tendered:	\$3,847.50
Change:	\$0.00
Balance Due:	\$0.00
	winding-11



PERMIT APPLICATION GROUNDWATER AND VADOSE MONITORING WELLS AND EXPLORATORY OR TEST BORINGS

	•
	OFFICE USE ONLY
	PERMIT LMON # 103910
	SAM CASE Y/N# H & GO17
1	DATERECEIVED: 4-5-04
•	PATE RECEIVED: 4-5-04 FEE PAID: \$3847.50
7	CPHECK#F1 1065
-	

(The person, persons, or o	company responsible for the	San Diego, Landfill Mind construction, maintenance, and destruction of City San Diego Phone 806-495-5480 Ext.	of the proposed borings and/	or wells.)			
B. SITE ASSESSMENT PROJECT NUMBER – IF APPLICABLE #							
C. CONSULTING FIRM Geospher Consultants Mailing Address 10875 Rancho Bernardo AL St. 200 City San Diego State (A Zip 92127) Registered Professional San Millians Very Witting Registration # 7115 (PG) Contact Person San Millian Phone 858-674-659 Ext. 011 Fax 856-674-6586							
D. DRILLING COMPAN Contact Name Kurt N		liitornia Inc.	C57# <u>C57-7175</u>	<u>110</u>			
		State <u>CA</u>	Zip <u>90650-</u>				
E. CONSTRUCTION IN	FORMATION						
TYPE OF WELLS/ BORINGS TO BE CONSTRUCTED # Groundwater Vadose Boring Other Soil Vafor well Counstar NUMBER OF WELLS TO BE DESTROYED	CASING Not Applicable Type Gauge Diameter Well Screen Size Filter Pack	SEAL/BORING BACKFILL Neat Cement Cement & Bentonite Sand-Cement Bentonite Other Borehole diameter Air Rotary Other Direct Push	Bentonite	er depth: ft. boring ft. 0 to 3 Albeled Diagrams to to to to to to to to to			
I agree to comply with the requirements of the current Site Assessment and Mitigation Manual, and with all ordinances and laws of the County of San Diego and the State of California pertaining to well/boring construction and destruction. DRILLER'S SIGNATURE DATE 4-2-06							
Within 60 days of completion, I will furnish the Monitoring Well Permit Desk with a complete and accurate well/boring log. I 'certify the design and construction or destruction of the well/borings in accordance with the permit application.							
PG/RCE SIGNATURE	J 41		DATE 4-3-00	6			

SITE II	NFORMATION			
Site	SESSOR'S PARCEL NUMBER Next to	, , ,	ght-of-ways (See Figure	e 2)
Site	Address: 14900 Poway Road C	ity: San Diego Zip: 92064		
PRO	OPERTY OWNER: County of San Die	go		
Pho	one 858-495-5480 Ext.	Fax		
Mail	lling Address: 5201 Ruffin Road Suite D	City: San Diego State:	CA Zip 92123	
NU	MBER OF WELLS 22 TYPE OF WEL	LS Soil Vapor Wells		
2. ASS	SESSOR'S PARCEL NUMBER			
	Name			,
Site	Address	City	Zip)
PRO	OPERTY OWNER			
Pho				
Mail	ling Address			
NU	MBER OF WELLS TYPE OF	WELLS		
3. ASS	SESSOR'S PARCEL NUMBER			
	Name			
	Address)
PRO	OPERTY OWNER			
Pho	ne	Ext	Fax	
Mail	ling Address	City	State	Zip
NU	MBER OF WELLS TYPE OF	WELLS		
4. ASS	SESSOR'S PARCEL NUMBER			
	Name			
	Address)
PRO	OPERTY OWNER			
Pho				
	ling Address		0. 4	

Permit Fees In Effect for July 1, 2005 - June 30, 2006

G. FEES (in effect beginning July 1, 2005, through June 30, 2006)

The County Board of Supervisors authorized a 10% credit, for the Fiscal Year ending June 30, 2006, to be applied to the Department of Environmental Health customers. This credit is being provided to qualified fee-based programs that have contributed to the cost reduction/cost containment/cost avoidance efforts initiated by the Department. This fee adjustment, for the Fiscal Year ending June 30, 2006, is applicable to fees and permits due and/or obtained during this period. The 10% is not applicable to enforcement fees or fees relating to non-compliance of permit regulations.

ACTIVITY	FEE SCHEDULE	AMOUNT
	FEE ONE-TIME FISCAL YEAR 10% CREDIT	
Permit for Well Installations Only (Groundwater Monitoring Wells, Vadose, Vapor Extraction Wells)	\$185.00 for the first monitoring well \$185.00 – 10% <\$18.50> =	<u>1</u> x \$166.50 \$ 166.50
Permit for Well Maintenance Inspection (Valid for three years)	\$100.00 for first well maintenance inspection \$100.00 10% <\$10.00> =	1 x \$ 90.00 \$ 90.00
Each Additional New Well	\$160.00 for each additional well installation \$160.00 - 10% <\$16.00> = \$ 30.00 for each additional well maintenance inspection \$ 30.00 - 10% <\$ 3.00> =	21 x \$144.00 \$ 30 24.00 21 x \$ 27.00 \$ 567.00
Permit for Borings Only (CPT's, Hydropunch, Geoprobes, Temporary Well Points, etc.)	\$185.00 for the first boring \$185.00 – 10% <\$18.50> = \$ 50.00 for each additional boring \$ 50.00 – 10% <\$ 5.00> =	1 x \$166.50 \$ x \$ 45.00 \$
Permit for Well Destructions Only	\$185.00 for the first destruction \$185.00 – 10% <\$18.50> = \$120.00 for each additional destruction \$120.00 – 10% <\$12.00> =	x \$166.50 \$ x \$108.00 \$
Permit for any Combination of Well Installations, Borings, & Destructions (except UST backfill permit) Permit for any Combination of Well Installations, Borings, & Destructions (except UST backfill permit)	The first activity will be \$185.00. \$185.00 - 10% <\$18.50> = Additional activities will be as follows: \$160.00 for each additional well \$160.00 - 10% <\$16.00> = \$100.00 for first well maintenance inspection \$100.00 - 10% <\$10.00> = \$ 30.00 for each additional well maintenance inspection \$ 30.00 - 10% <\$ 3.00> = \$ 50.00 for each additional boring \$ 50.00 - 10% <\$ 5.00> = \$120.00 for each well destruction \$120.00 - 10% <\$12.00> = TOTAL COST OF PERMIT	1 x \$166.50 \$ x \$144.00 \$ 1 x \$ 90.00\$ x \$ 27.00 \$ x \$ 45.00 \$ x \$108.00 \$
	TOTAL COST OF PERMIT	\$ 30 77.00
Permit for Underground Storage Tank Monitoring System in Backfill (i.e. Enhanced Leak Detection)	(Flat Fee) \$320.00 - 10% <\$32.00> =	\$288.00

	If wells are to be destroyed, provide a description of method of destruction NA
2.	
	What is the purpose of the well/boring investigation?
	a. Part of an ongoing site assessment case in which DEH or another government regulator is the lead agency.
	b. Part of a Phase I investigation for property ownership transfer or:
	C. Geotechnical investigation for proposed construction, land stabilization or:
	d. Other:
3.	What procedures will be used to prevent the well/boring from providing an avenue to contamination during construction? The vapor wells will be installed imediately after the borings are completed
4.	What field procedures will be utilized to determine if contamination exists? The cuttings will be screened with a photoionization detector (PID) and a composite sample from the cuttings will be submitted to an analytical laboratory for analysis
5.	What procedures will be used to determine whether samples will be sent for laboratory testing or archiving? Soil Vapor samples will be submitted to an analytical laboratory
6.	What constituents will be monitored and tested (Include EPA Laboratory Test Methods to be used)? <u>VOCs EPA Method TO-15 and Fixed Gases</u>
7.	How will samples be transported and preserved? Soil Vapor samples will be Fed-Ex to lab (No perservative).
8.	What sampling methods will be used? Soil cuttings will be stored in 55-gallon drums and one composite soil sample will be collected from all drums.
	Are you proposing a variation from the methods and/or procedures presented in the requirements for the construction or destruction of Vadose and Groundwater Monitoring Wells (Current SAM Manual Requirements)? If yes, specify these variations and include a well construction diagram and all required supporting documentation. Refer to the SAM Manual Appendix B for monitoring well guidelines (http://www/sdcounty.ca.gov/deh/lwq/sam/monitoring_well.html). :yes, see attached diagram per discussion with Kevin Heaton
10.	Are you proposing a variation in drilling and destruction of soil borings from the methods and/or procedures specified in the current SAM manual? If yes, specify these variations and include a destruction diagram. No
11. '	What procedures will be used to ensure that the drilling equipment will introduce no contamination? <u>Drilling equipment will be steamed cleaned prior to drilling onsite</u>

well location

which will arri	ve onsite pre-wrapt	sed to clean ca	sing and scree	n prior to install	ation? New tubing will be
	·;				
				•	
					4
					•
					-
				•	
					₩ £>=

	owno. 06-38
GUY OF POWAY	0W NO
A	ssociated Plan No.
C	ontact Person Sean McChain
PUBLIC RIGHT-OF-WAY PERMIT A	ddress
APPLICANT PLEASE FILL OUT NUMBERED ITEMS 1-4:	Phone No. 858-674-6659 ex 211
	reby requests permission to work in the following streets or
other public easements (provide owner, address, and property description	b:
2 70 10711	A COMPLETE SANCTON SERVER SANCTON OF THE SERVER SANCTON OF THE SAN
2. TO INSTALL (provide type of installation and approximate dimension)	ons, length, width, and depth):
4 rect from Curb in City craft of	orans / Lorated Appreximately
3. X PRIVATE DEVELOPMENT SOUTH POV	VAY CITY PROJECT
4. Contractor Gir Sinter Consultants Subcom	
	e No. # 7//5
Address 10875 Rancho Bernardo A	Poad Suite 200
Contractor's License No. 705927 Type of	License C-57
APPLICANT MUST SUBMIT THE FOLLOWING WITH THE APPLIC	ATION
1. Copy of the Contractor's license (Type A required).	ATION:
2. Certificate of insurance for worker's compensation and general	liability in the amount of \$1 million
naming the City as an additional insured.	PRE-APPHOVED
3. Detailed and scaled traffic control plan for all phases of work.	NOT FOR CONSTRUCTION PENDING PRE-CONSTRUCTION MEETIN
4. Detailed construction schedule and clear description of work.	PENDING PRE-CONSTRUCTION WEELS
5. Itemized cost estimate (unless fees were previously paid with an6. All applicable fees and deposits.	approved plan listed above).
NOTE: Application will not be accepted unless items 1-6 are prov	rided. In some cases, the City will consider a

of items 1-3 with submittal of a waiver request.

(8:30 a.m. and 3:30 p.m. unless otherwise specified)

Contractor must call Underground Service Alert at 1-800-422-4133 to have utilities marked out before the preconstruction meeting. After approval of permit, the City Inspector will contact the contractor and set up a time for a pre-construction meeting. City inspector must have a minimum of 48-hours notification prior to scheduling of pre-construction meeting and construction. Location of all utility cabinets or structures are subject to review, and may require an MDRA to be processed through Development Services Department, Planning division.

In consideration of the granting of this application, the permittee agrees to, and by this instrument, does hold the City of Poway, its elective and appointed officials, officers, agents, and employees harmless from any liability for claims for work done and material furnished upon the property, or any improvements made on the property covered by this permit. Permittee further agrees to hold and save harmless from any claim, cause of action, liability or responsibility for any accident, loss or damage to persons or property caused by the negligence of the Permittee, secured by the submitted certificate of insurance, arising out of the work undertaken pursuant to this permit, or any other permits that may be granted pursuant thereto. I, the applicant, have read and understand the front and

ouch of this appropriation and will adde by its rules and regulation	is.	
Signature of Applicant San M. Claur	Date 3-16-06	
Approved Approved Date 3/27/06 Traffic Engineer	Kariette W. Ohn	Date 3/27/66
PERMIT VALID UNTIL: Teme 15/ 2006	Senior Givil Engineer Inspector On Shayo.	Date 3/28/06
APPROVED EXTENSION DATE		Date



GeoSyntec Consultants

Proposed Soil Vapor Well Cluster Construction

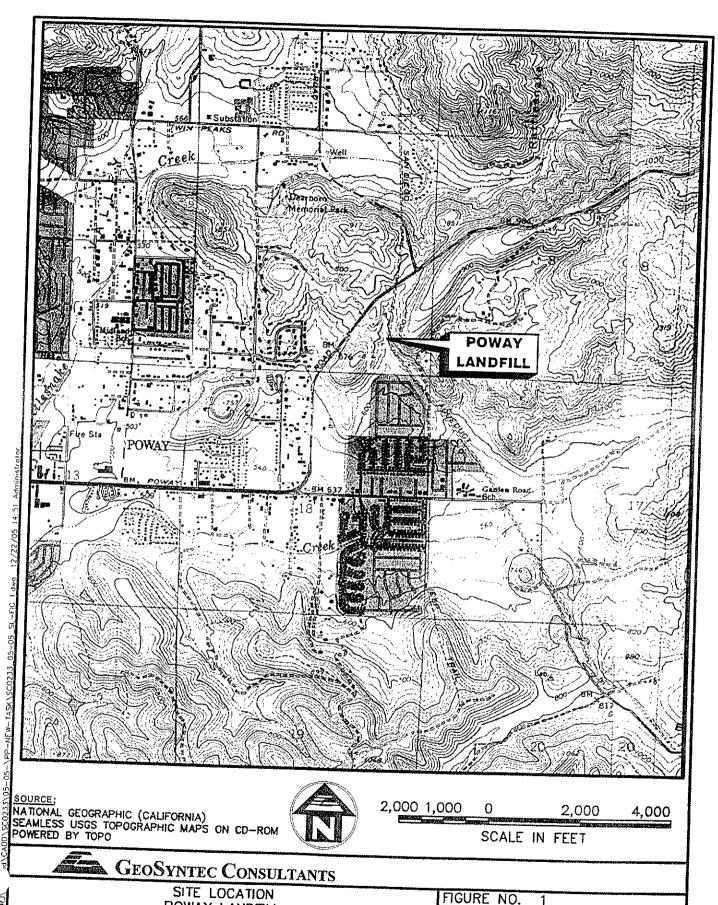
k	Poway Landfill	
Well ID:	Soil Vapor Well Cluster	Date: 3/15/06
Drilling Company:		Drilling Method: Direct Push
Drillers:		Proposed Boring Depth: 5-10 feet bgs
Geologist:	Sean McClain	Proposed Boring Diam: 2-inches
		Proposed Well Depth: 5-10 feet bgs Well Diameter: 2 Vapor well cluster and
4	4 fi	2 vapor wen cluster, each
3 ft Concrete	4" PVC Riser	I/4 -inches diameter Steel Vault w/ Locking Cap Proposed Well Construction: Material: I/4 " nylon tubing Inside Diamter: Proposed Filter Pack:
0.5 ft Hydrated Bentonite	minus America	Type/Brand: Sand
<u> </u>	human Hydrated 4 ft	
↑	1.5 ft Summer Bentonite	Di Louis de la Bellow
f	Annun	Placement Method: Tremie
1 ft Filter Pack (Sand)	1/4-inches Nylon Tube Dry Bentonite 2 ft	Proposed Seal: Type/Brand: Amount Used: Vol. Fluid Added: Set-up Time: Placement Method: Proposed Grout: **Email: **Emai
	2-inch Borehole Diam. 6-inch long stainless steel	Type/Brand: Concrete Amount Used: Vol. Fluid Added: Placement Method: Proposed Well Completion:
	Wire screen Filter Pack (Sand) 1 ft	Above Grade / Below Grade / Flush Mounted Guard Posts? Y / N Pad Size: 4X3 Cover Type/Size: 7-inch steel Flush Mount
	2-inches	Comments:
	Borehole Diam.	
		Geologist Signature:



GeoSyntec Consultants

Proposed Single Soil Vapor Well Construction

Site:	Poway Land	ត្ប				
Well ID:	Single Soil V				Date:	3/10/06
Drilling Compan		apor wen			Drilling Method:	Direct Push
Drillers:			Proposed Boring Depth:		5 feet bgs	
Geologist:	Sean McClai	Sean McClain			2-inches	
				Proposed Well Depth: Well Diameter:	5 feet bgs	
	5.402	3 በ			on Diameter.	1/4 -inches diameter
3 ft Concrete				7" Steel Vault /C Riser w/ Lockin	<u>Proposed Well Construc</u> g Cap Material:	ition: 1/4 " nylon tubing
		0000			Inside Diamter:	
	rated summing on the summing s		0.5-inches		T	Sand
	4.5		1		Amount Used:	l ft
Dr Bento			0.5-inches		Placement Method:	Tremie
		anama —	<u>↓</u>			ATOME
			1		Proposed Seal:	
Filte				6-inch stainless	Type/Brand:	Granualar Bentonite
Pack (Sand	1411441111		l fi	steel wire	Amount Used:	0.5" dry and 0.5" hydrated
				screen	Vol. Fluid Added:	
					Set-up Time:	
	Nylon 1/4-in	Tube	-		Placement Method:	Tremmie
	2-inc	ches			Day and Control of the Control of th	
	Borehole	Diam.			Type/Brand:	*****
						Concrete
					Amount Used:	
					Vol. Fluid Added:	
					Placement Method:	
					Proposed Well Completion:	
					Above Grade / Below	Grade / Flush Mounted
					Guard Posts? Y / N	
					Pad Size:	3X3
					Cover Type/Size:	7-inch steel Flush Mount
					Comments:	
					Geologist Signature:	*C-
	_				- •	



PROJECT NO. SC0233

DECEMBER 2005

DATE:

\PRJ\

POWAY LANDFILL

POWAY, CALIFORNIA



ROW NO	06-0)4
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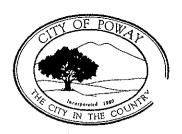
1	ROW NO. () (_~ 04
CITY OF POWAY	
	Associated Plan No. See Attribum docation Mi
	Contact Person Son 277 Caria
PUBLIC RIGHT-OF-WAY PERMIT	Address 11:05 Franks Preparts Rd 5th
IN THE CO	500 Den CA
APPLICANT PLEASE FILL OUT NUMBERED ITEMS 1-4:	Phone No. (858) 674-6859
1. APPLICANT, Gen Syntee Carellants	hereby requests permission to work in the following streets or
other public easements (provide owner, address, and property description)	ntion):
Hoperty Advacent to Suthurs	+ Cocre of Down Londall
(Dorest No. 222-461-25)	From of Donay Londall
2 TO INSTALL (provide type of installation and approximate dim	encione length width and denth).
One consideration maritan well: 6" lan	in to associantly 75" with with
margaret Local according to To. 12	ido the Assumpted and when Cultures
Oper consideration and approximate unit of the constraint of the constraint of the constraint of the court of	POWAYCITY PROJECT
4. Contractor Transfer Dolling Su	
• "	
Job superintendent Dave Maske Li	icense No.
Address 9631 CAMIDA Start Contractor's License No	SA- Dina 14 92126
	The state of the s
Contractor's License No. Ty	pe of License
 APPLICANT MUST SUBMIT THE FOLLOWING WITH THE APPLICATION OF THE Contractor's license (Type A required). Certificate of insurance for worker's compensation and gennaming the City as an additional insured. Detailed and scaled traffic control plan for all phases of words. Detailed construction schedule and clear description of words. Itemized cost estimate (unless fees were previously paid with all applicable fees and deposits. NOTE: Application will not be accepted unless items 1-6 are	neral liability in the amount of \$ Amillion APPROVED ORK. ork. ork. ork. ith an approved plan listed above).
waiver of a part of the requirements of items 1-3 wi	•
THE OF A PARE OF THE ANGMED CHECKED IN METHO X-2 WI	en andminent of a mathe requests
Hours of work (8:30 a	a.m. and 3:30 p.m. unless otherwise specified).
Hours of work (8:30 a (8:30 a control to the contro	Ca. O SART A P. C.
Contractor must call Underground Service Alert at 1-800-422-4133	to have utilities marked out before the preconstruction meeting.
After approval of permit, the City Inspector will contact the contract	
must have a minimum of 48-hours notification prior to scheduling of	
cabinets or structures are subject to review, and may require an MI	ORA to be processed through Development Services Department,
Planning division.	
In consideration of the granting of this application, the permittee ag	press to and by this instrument does hold the City of Power its
elective and appointed officials, officers, agents, and employees ha	
furnished upon the property, or any improvements made on the prop	
save harmless from any claim, cause of action, liability or responsibil	
by the negligence of the Permittee, secured by the submitted certific	

back of this application and will abide by its rules and regulations.

this permit, or any other permits that may be granted pursuant thereto. I, the applicant, have read and understand the front and

APPROVED EXTENSION DATE By:

CITY OF POWAY DEVELOPMENT SERVICES DEPARTMENT



REQUEST FOR WAIVER OF RIGHT-OF-WAY PERMIT SUBMITTAL REQUIREMENTS

Right-of-Way Permit No. 06-09

Applicant Consultants Date 1-17-06	
Address 11305 Rancho Bernardo Rd Ste 101	
In Diep, CA 92/27	
Telephone No(s). 858-674-6559 ex. 203	
Private development project City Capital Improvement project Description of work to be done: This fall menifor (vell-	
Waiver requested: Type A Contractors License waived A	
C-57 license	
DNO T.C. PLAN IS REQ. CLA 4/19/06	
Justification: Drillers are only required to carry C-57	
NO WORK ON STREET	
,	
FOR OFFICE USE ONLY	
Approval date 1/23/06	
Senior Engineer Konnotty W. Olan	
Comments ROUTE Z IS TO BE USED FOR ACCES	5 5- ,
POUTE 1 IS NOT TO BE USED.	

M:\engserv\eng forms\Land Development forms\Request for waiver .doc

CONTRACTORS STATE LICENSE BO

[heart Number 547737

Enty CORP

TRI-COUNTY DRILLING INC

Cheminalists C57

EXPIRATE DAY 11/30/2006



California Home

Wednesday, Janu-



License Detail Contractor License # 547737

CALIFORNIA CONTRACTORS STATE LICEN

DISCLAIMER

A license status check provides information taken from the CSLB license data base. Before on this information, you should be aware of the following limitations:

- CSLB complaint disclosure is restricted by law (<u>B&P 7124.6</u>). If this entity is subject to complaint disclosure, a link for complaint disclosure will appear below. Click on the lin button to obtain complaint and/or legal action information.
- Per <u>B&P 7071.17</u>, only construction related civil judgments reported to the CSLB are disclosed.
- Arbitrations are not listed unless the contractor fails to comply with the terms of the arbitration.
- Due to workload, there may be relevant information that has not yet been entered ont Board's license data base.

Extract Date: 01/18/2006

* * * Business Information * * *

TRI-COUNTY DRILLING INC 9631 CANDIDA STREET SAN DIEGO, CA 92126 Business Phone Number: (858) 271-0099

Entity: Corporation
Issue Date: 11/12/1988 Expire Date: 11/30/2006

* * * License Status * * *

This license is current and active. All information below should be reviewed.

* * * Additional Status Information * * *

The license may be suspended on 02/08/2006 if the workers' compensation insurance polic filed with the CSLB.

* * * Classifications * * *

Class	Description
C57	WELL DRILLING (WATER)

* * * Bonding Information * * *

CONTRACTOR'S BOND: This license filed Contractor's Bond number 6945837 in the arr \$10,000 with the bonding company

WESTERN SURETY COMPANY.

Effective Date: 01/01/2004

Contractor's Bonding History

BOND OF QUALIFYING INDIVIDUAL(1): The Responsible Managing Officer (RMO) SH MARIE PETERSON certified that he/she owns 10 percent or more of the voting stock/equi corporation. A bond of qualifying individual is **not** required.

Effective Date: **01/25/1994**

* * * Workers Compensation Information * * *

This license has workers compensation insurance with the <u>STATE COMPENSATION INSURANCE FUND</u>

Policy Number: 059-000346 Effective Date: 06/01/1998 Cancellation Date: 01/01/20

Workers Compensation History

Personnel List

License Number Request

Contractor Name Request

Personnel Name Request

Salesperson Request

Salesperson Name Request

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THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY,

ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – SCHEDULED PERSON OR ORGANIZATION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

SCHEDULE

Name Of Additional insured Person(s) Or Organization(s):	Lorettonic) Of Course 10	
City of Poway	Location(s) Of Covered Operations	
13325 Civic Center Drive		
Poway, CA 92064		
•		

- A. Section II Who Is An Insured is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by:
 - 1. Your acts or omissions; or
 - 2. The acts or omissions of those acting on your behalf,

in the performance of your ongoing operations for the additional insured(s) at the location(s) designated above. B. With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to "bodily injury" or "property damage" occurring after:

- All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or
- 2. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

Insurance Certification Record Department: Development Services

ured	Geosyntec Consultants, inc	Approved
Job or Project	ROW Permit]
Contact	Pat Phelps	
Contract No.	05-038, 06-009	
General Liability	Ø 9/1/2006 Professional Liability Ø	9/1/2006
Auto Liability	9/1/2006 Wkrs Compensation	9/1/2006
Excess Liability	✓ 9/1/2006 <i>Misc. Liability</i>	
Endorsement	General Renewal Needed	☑
Notes		
7 1		

ENDORSEMENT NO. 05

This endorsement, effective 12:01 AM,

Forms a part of Policy No:

Issued to:

By:

03/22/05

GL 417-86-18

Geosyntee Consultants, Inc.

Commerce & Industry Insurance Company

It is hereby agreed that the following form is added as respects to form CG 20 10 (07 04) attached:

Additional Insured - Owners, Lessees or Contractors - Scheduled Person or Organization.

All other terms, conditions, and exclusions shall remain the same.

Authorized Representative

	· .						
	MARSH		CERTIFI	OATE OF I	NSURANGE	CERT	FICATE NUMBER 000632666-06
PR	RODUCER Marsh USA Inc. 1560 SAWGRASS CORPC SUITE 300	RATE PKWY.	NO RIGHTS POLICY. TH	UPON THE CERTIFICAT	A MATTER OF INFORMATION (TE HOLDER OTHER THAN THOS NOT AMEND, EXTEND OR ALT RIBED HEREIN.	ONLY AND	CONFERS
1	SUNRISE, FL 33345-9010 Attn: WILLIAM BARROWS	FtLauderdale.certs@marsh.con	n	COMPAN	IES AFFORDING COVE	RAGE	
SR		CAR ALL4	COMPANY		NEW YORK WALLES	~ ~ ~ ~	
	SURED BC	OAR ALL4	A	COMMERCE AND	INDUSTRY INSURANCE	: COMP	ANY
	GEOSYNTEC CONSULTAI	NTS, INC.	COMPANY B	AMERICAN INTER	NATIONAL SPECIALTY	LINES	
	5901 BROKEN SOUND PA BOCA RATON, FL 33487-2	RKWAY NW, SUITE 300 2775	COMPANY	INSURANCE COM	PANY STATE OF PENNS	SYLVAI	NIA
			COMPANY D				
Ć	YERAGES OF THE STATE OF THE	s certificate supersedes and rep	laces any previously i	ssuedicertificate for	the policy period noted h	előw	Valencia e Va
	THIS IS TO CERTIFY THAT POLICIES (NOTWITHSTANDING ANY REQUIREMENT PERTAIN, THE INSURANCE AFFORDED B LIMITS SHOWN MAY HAVE BEEN REDUCK	OF INSURANCE DESCRIBED HEREIN T, TERM OR CONDITION OF ANY CONTR BY THE POLICIES DESCRIBED HEREIN	HAVE BEEN ISSUED TO ACT OR OTHER DOCUMEN	THE INSURED NAMED	HEREIN FOR THE POLICY F	PERIOD II	D OD MAY
LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)		E	IMITS	
Α	GENERAL LIABILITY	GL4178618	09/01/04	09/01/05	GENERAL AGGREGATE	\$	2,000,000
	X COMMERCIAL GENERAL LIABILITY				PRODUCTS - COMP/OP AGG		2,000,000
	CLAIMS MADE X OCCUR				PERSONAL & ADV INJURY	\$	1,000,000
	OWNER'S & CONTRACTOR'S PROT				EACH OCCURRENCE	\$	1,000,000
	X SIR: 100,000				FIRE DAMAGE (Any one fire)	\$	100,000 25,000
A	AUTOMOBILE LIABILITY	CA5053937 (AOS)	09/01/04	09/01/05	MED EXP (Any one person)	 	
Α	X ANY AUTO	CA1955450 (TX)	09/01/04	09/01/05	COMBINED SINGLE LIMIT	\$	1,000,000
Α	ALL OWNED AUTOS SCHEDULED AUTOS	CA1955451 (MA)	09/01/04	09/01/05	BODILY INJURY (Per person)	\$	
	X HIRED AUTOS X NON-OWNED AUTOS				BODILY INJURY (Per accident)	s	
					PROPERTY DAMAGE	\$	
	GARAGE LIABILITY				AUTO ONLY - EA ACCIDENT	\$	
	OTUA YNA				OTHER THAN AUTO ONLY:		
					EACH ACCIDENT	\$	
В	EXCESS LIABILITY	BE8085625			AGGREGATE		
ט	X UMBRELLA FORM	02000020	09/01/04	09/01/05	EACH OCCURRENCE	\$	10,000,000
	OTHER THAN UMBRELLA FORM				AGGREGATE	\$	10,000,000
1	WORKERS COMPENSATION AND	9682856 (AOS)	09/01/04	09/01/05	SIR: X WC STATU- OTH- X TORY LIMITS ER		10,000
X.	EMPLOYERS' LIABILITY	9682857 (CA)	09/01/04	10000100	EL EACH ACCIDENT	\$@/\$E	1,000,000
>	THE PROPRIETOR/ PARTNERSÆXEGUTIVE X INCL	WC9682858 (NJ)	09/01/04	l	EL DISEASE-POLICY LIMIT	\$	1,000,000
	OFFICERS ARE: EXCL			1 F	EL DISEASE-EACH EMPLOYEE	\$	1,000,000
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- 1	Prof. Liability & Contr. Poll. Liab.	195-19-04	09/01/04	1	Each Claim / Aggregate SIR: Each Claim	~	5,000,000
- 1	Claims Made Form			[I	ncl. Prod. & Completed C	ìne	300,000
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YTI	OF POWAY IS INCLUDED AS AI	N ADDITIONAL INSURED EXCE	PT FOR WORKERS'	COMPENSATION.			
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	CITY OF POWAY		į.		ENDEAVOR TO MAIL30 DAYS		1
	13325 CIVIC CENTER DRIVE				URE TO MAIL SUCH NOTICE SHALL		1
	POWAY, CA 92064		LIABILITY OF ANY KIN		RDING COVERAGE, IT'S AGENTS OR	KEPRESEN	HARVES, OR THE
			MARSH USA INC.	HEIGATE.			
			BY: Frances Si	gurani 🚁	naca digunani		İ

Fances Signani.

VALID AS OF: 03/09/05

A 2000, a deposit was paid back to GeoSyntec Consultantem the City of Paway for a previous well installation. (Check & 17668)
We are applying for a City right of way permit for a new
Well installation. The cost of this permit is \$\frac{4}{1350}.00.

Well installation. The cost of this permit is \$\frac{4}{1350}.00.

GeoSyntec would when to apply the City of Paway's Check to the

Pew permit deriving a balance of \$650.00 and to GeoSyntee

New permit deriving a balance of \$650.00 and to GeoSyntee

On the \$650.00 be paid back to GeoSyntee with the

Can the \$650.00 be paid back to GeoSyntee with the

Son Mckin Garatec

\$ 2000.00 City Check accepted as pryment. -

RECEIVED

JAN 17 2006

CITY OF POWAY DEVELOPMENT SERVICES

DEPARTMENT OF DEVELOPMENT SERVICES

RECEIPT OF FEES FOR LAND DEVELOPMENT ACTIVITIES .

45	V OF POI	Z Com
		31
1		
10	IN THE C	OUNT

Project Name: Maritority Wells	Developer: Geo Synta Consultanty
Address: Poway Land Il	Project No: 06-09
Check No.: 00147563 Received By: SAV	Date: 1/1/1/10

ACTIVITY	ACCOUNT	FEES PAID
Boundary Adjustment (\$1,000/Application)	100-305-7735	
Certificate of Compliance (\$1,000/Application)	100-305-7735	
Certificate of Correction (\$100/Fee)		
Drainage Fee (See Schedule)	232-305-7712	
Easement Dedication (\$1,000/Application)	100-305-7735	
Final/Parcel Map Plan Fee (\$1,000 Sheet)	100-305-7735	-
Grading Permit Fee (\$100/Permit)	100-305-7235	
Grading Plan Check Fee (See Schedule)	100-305-7735	
	100-305-7735	
Improvement Plan Administrative Fee (\$100 Sheet)	100-305-7735	
Improvement Plan Check Fee (See Schedule)	1	
Inspection Fee (See Schedule)	100-306-7737	\$300~
Merger (\$800/Application)	100-305-7735	
Minor Development Review (\$500/Lot)	100-306-7737	
Miscellaneous (CIP Plans, Blueprints, Photocopies, etc.)	100-305-7736	J
Park Fee (See Schedule)	411-305-7630	
Reimbursement Agreement (\$1,000 + 1% Total Reimbursement Amount)	100-305-7888	
Right-of-Way Permit or Blasting Permit (\$50/Permit)(See Schedule)	100-305-7234	\$50-
SEWER	.1	
Clean Out Box (\$50/Box)	520-305-7683	
Clean Out Inspection Fee (\$25/Connection)	520-403-7685	
Line Charge/Indirect Benefit Fee (See Schedule)	520-305-7683	
Sewer Connection Fee (See Schedule)	520-305-7683	
Temporary Sewer Connection (\$500/Application)	520-305-7613	
Soils Report Review (See Schedule)	100-305-7735	
Street Light Annexation Fee (See Schedule)	275-305-7711	
raffic Mitigation Fee (See Schedule)	222-305-7713	
√acation (\$1,500 or \$2,500/Application)	100-305-7735	
WATER		
Temporary Water connection (\$500/Application)	510-305-7613	
Unmetered Landscape Water/Construction Water (See Schedule)	510-400-7642	
Water Authority Fee (See Schedule) PAID BY SEPARATE CHECK	510-305-7668	
Water Base Capacity Fee (See Schedule)	510-305-7667	
Water Lateral (See Schedule)	510-305-7669	
Water Meter/Backflow Prevention Device (See Schedule)	510-305-7669	
Water System Analysis (See Schedule)	100-305-7612	
Stormwater Pollution Prevention Plan Check Fee	100-305-7735	
Stormwater Pollution Prevention Inspection Fee	100-306-7737	
TOTAL		£350-

M:\engserv\eng forms\Land Development forms\Receipt of Fees for Dev Svcs.doc

13325 Civic Center Drive, Poway, CA 92064-5755 (858) 668-4600

City of Poway, PO Page	789, Poway, California 92074-0780
\$7 O. 150X	/89. Power o
	, Voway, California occa-
170	, -10111a 92074-0780

176689

O0147563

Check Date

12/30/05

S*****2,000.00

PAY TO THE ORDER OF

Geosyntec Consultants, Inc.
San Diego CA-92127

Galley Consultants and \$107

CITY OF POWAY P.O. BOX 789 POWAY, CA 92074

DEVELOPER DEPOSIT AND SECURITIES ADVICE FORM

DD MEIMOED	:
DP NUMBER DATE	·····
INITIAL	<u></u>
HALLION	

PROJECT NO REFERENCE NO.	Row of	o-09	ACCOUNT REFERENCE NO.	761- <u>\$603</u>	7895 - 7000
NAME	(-0-5	5-09 tec Consul	tate		
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				<u> </u>	
☐ CHARGES IN ☐ CORRECTION ☐ INVOICE PAIN ☐ REQUEST IN	N	☐ INITIAL DEF	NCE (Printout attached)	□ REFUND □ OTHER	
NAME OF PROJECT					
DEVELOPER'S NAME	Geo Synter	Consultants			
DEVELOPER'S ADDRES	s_11305 R	Consultants uncho Berna	No pd it	(01	
ACTIVITY					
CATEGORY	ACCOUNT NUMBER	AMOUNT RECEIVED		COMMENTS	
Grading Plan Check	5910				
Grading Inspection	5920				
Final Map Check	5930		*Inita	1 Deposit	
Improvement Plan Check	5940				
Improvement Inspection	5950			``	
Boundary Adjustment	5960				1
Miscellaneous	5970				
Security Deposit	5980	\$ [000 -			
Landscape Deposit		ı			
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	TOTAL	1/650-			
PREF	AREO BY S. N	05/01	DATE 1 (7/06		
City of Poway, 1	P.O. Box 789, Pov	vay, California 92	074-0789		00147563
176689) [wo Thousand & 0	Union Bank Poway Branch Poway (CA 16.49/1220		Check Date 12/30/05 \$****	Warrant Amount **2,000,00
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11305 Rancho Bernardo Road, Suite 101 San Diego, California 92127 • USA Tel. (858) 674-6559 • Fax (858) 674-6586

17 January 2006

City of Poway Planning Department 13325 Civic Center Drive Poway, CA 92064

Subject:

Supplemental Information for Right-Of-Way Permit

Poway Landfill Poway, California

GeoSyntec Consultants (GeoSyntec) is a subcontractor to the County of San Diego, Department of Public Works, Landfill Management (the County) for groundwater monitoring activities associated with the Poway Landfill (site). The site is located on the south side of Poway Road at 14900 Poway Road in the City of Poway (Figure 1). GeoSyntec is currently performing a study to evaluate groundwater condition downgradient of the site. The study involves the installation of one monitor well on City property (Parcel No. 323-461-25) west of the site (Figure 2).

Monitor Wells

At least 48 hours prior to commencing work at the site, GeoSyntec will mark the proposed drilling location and contact Underground Service Alert (USA) to identify the locations of underground utilities. In addition, GeoSyntec will subcontract Subsurface Surveys, Inc. to perform a geophysical survey of the proposed drilling location to ascertain the location of utilities and other potential subsurface obstructions to the proposed work.

One groundwater monitor well will be installed on vacant property adjacent to the southwest corner of the site (parcel number 323-461-25) owned by the City of Poway (Figure 2). Two routes are available to mobilize equipment to access this drilling location. Route 1, the equipment would drive up through the City easement accessed off ALORA street (Figure3). Route 2, the equipment would access the drilling location cross the property adjacent to the west property boundary of the site. The preferred route to access the drilling location is Route 1. Route 2 would require a property owner access agreement which could delay the project for some time. A 6-inch diameter boring will be advanced using an All-Terrain Vehicle (ATV) Air-Rotary drill rig. It is anticipated that the boring will not be advanced greater than 75 feet below ground surface (bgs). However, the actual installation depth will depend on the depth at which groundwater is encountered. The monitor well will be constructed, developed, and sampled according to current Department of Environmental Health (DEH) Site Assessment and Mitigation



17 January 2006

(SAM) manual guidelines (Figure 4). The monitor well will remain within this location until groundwater monitoring is no longer required at the site.

If you have any questions or require additional information, please contact me at (858) 674-6559, or contact Mr. Barry Pulver at the County at 858-495-5480.

Sincerely,

Sean McClain Project Manager

Figures:

Figure 1 Site Location

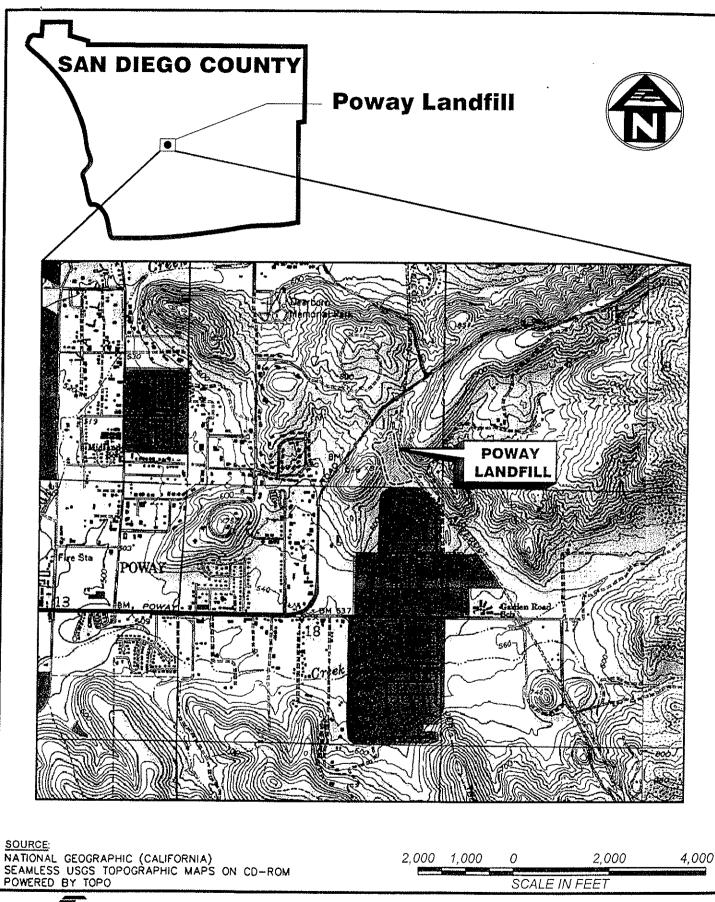
Figure 2 City Property and Monitor Well Location

Figure 3 Property Access Routes

Department of Environmental Health Typical Monitor Well Construction Figure 4

Diagram



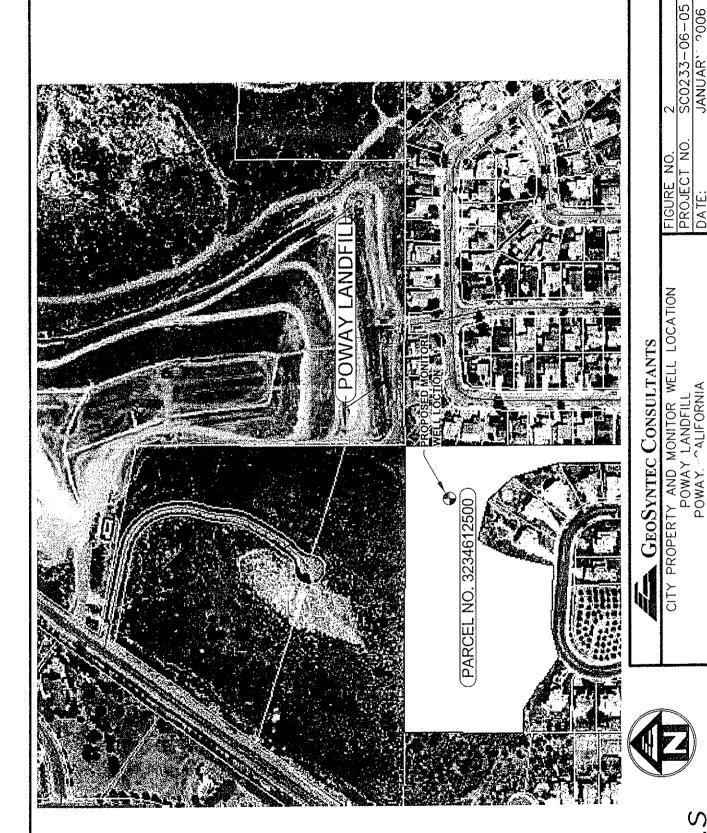


GEOSYNTEC CONSULTANTS

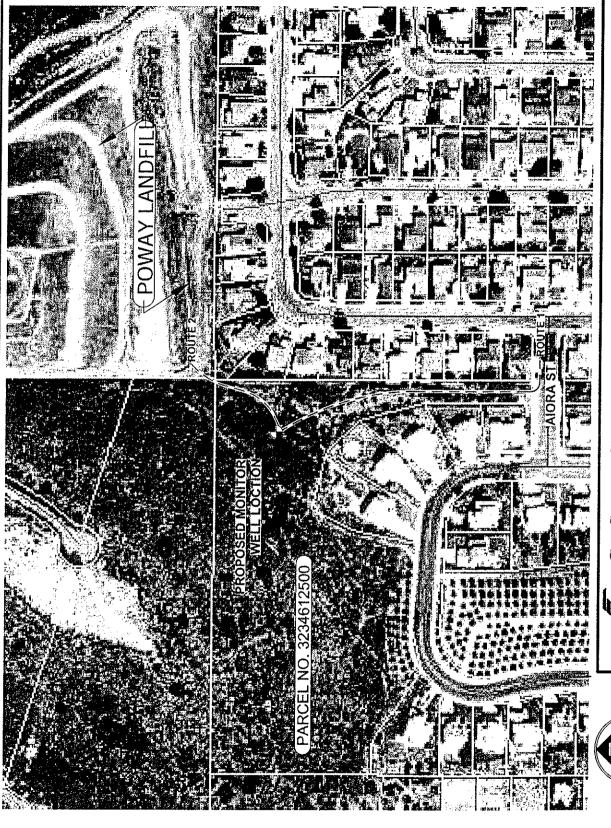
SITE LOCATION POWAY LANDFILL POWAY, CALIFORNIA

FIGURE NO. PROJECT NO. SC0233. DATE:

JANUARY 2005



JANUAR





PROPERTY ACCESS ROUTES
POWAY LANDFILL
POWAY, CALIFORNIA

FIGURE NO. 3

PROJECT NO. SC0233-06-05

DATE: JANUARY 2006

N.T.S

TYPICAL MONITOR WELL CONSTRUCTION DETAIL 3' LOCKING: **MONUMENT** CAP TRAFFIC RATED WATER-TIGHT VAULT COVER CONCRETE -LOCKING WELL CAP - PORTLAND CEMENT/BENTONITE GROUT 4" ID, SCHEDULE 40 BLANK PVC CASING - BENTONITE SEAL TD - FILTER PACK (#3 SAND) ▼ GROUNDWATER SURFACE 4" ID, SCHEDULE 40 0.020 SLOT PVC SCREEN - THREADED PVC END CAP

GEOSYNTEC CONSULTANTS

DEPARTMENT OF ENVIRONMENTAL HEALTH
MONITOR WELL CONSTRUCTION DIAGRAM
POWAY LANDFILL
POWAY, CALIFRONIA

FIGURE NO. 4

PROJECT NO. SC0233-06-05

DATE:

JANUARY 2006

GEOSYNTEC CONSULTANTS

11305 Rancho Bernardo Road, Suite 101 San Diego, California 92127 - USA Telephone: (858) 674-6559 • Fax: (858) 674-6586 E-mail: smcclain@geosyntec.com





APPROVED EXTENSION DATE

ROW NO.	06-38
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CITY OF POWAY	
	Associated Plan No
	Associated Plan No. Contact Person Sean MCClain
PUBLIC RIGHT-OF-WAY PERMI	IT Address
A DDI YOUNG BY THE OF THE A	
APPLICANT PLEASE FILL OUT NUMBERED ITEMS 1-4:	Phone No. <u>858-674-6659</u> ex 2/1
1 APPLICANT (200 Sunday Consult	6539
other public easements (providé owner, address, and property de	75, hereby requests permission to work in the following streets or
(Fig. 720 o	escription): See Attachment
2. TO INSTALL (provide type of installation and approximate	dimensions, length, width, and depth):
- 22 Soil VAON Wells (See W	dimensions, length, width, and depth):
3 Y DAYLARD DEVENO COCK, IN COCK, MAKES	OF-UNIC
SOU	TH POWAYCITY PROJECT
4. Contractor Gasintee Consultants	Cut-conducts //:
	_Subconfractors
Job superintendent Very Wittia	License No # 7//5
Address 10875 Ronald Brings	do Alogd Suite 200
705000	
Contractor's License No. 205327	_ Type of License
APPLICANT MUST SUBMIT THE FOLLOWING WITH THE	A DOX TO LOWON
1. Copy of the Contractor's license (Type A required).	APPLICATION:
2. Certificate of insurance for worker's compensation and	General liability in the service Con 199
naming the City as an additional insured.	general hability in the amount of \$1 million PRE-APPROVED
3. Detailed and scaled traffic control plan for all phases of	
4. Detailed construction schedule and clear description of	work PENDING PRE-CONSTRUCTION MEET
5. Itemized cost estimate (unless fees were previously paid	
6. All applicable fees and deposits.	- will all approved plain issue above).
NOTE:	
NOTE: Application will not be accepted unless items 1-6	are provided. In some cases, the City will consider a
waiver of a part of the requirements of items 1-3	with submittal of a waiver request.
Hours of work 3 3 30 (8:	20 12.00
(8:	30 a.m. and 3:30 p.m. unless otherwise specified).
Contractor must call Underground Service Alert at 1-800-422-4	133 to have utilities marked out before the preconstruction meeting
- 11 approval of period, the City Hispector will contact the confr	actor and set up a time for a pre construction marking. City, i.e.,
and a minimum of Apartonic Hollication buot to scheduling	of pre-construction meeting and as-stated to the contract of t
of situations are subject to review, and may require an	MDRA to be processed through Development Services Department
Planning division.	provided an ough Development betvices Department
Terrorita de Calendario	
in consideration of the granting of this application, the permittee	e agrees to, and by this instrument, does hold the City of Poway, it
order to and appointed officials, officers, agents, and employees	harmless from any liability for claims for work done and materia
rainished upon the property, of any improvements made on the n	roperty covered by this permit. Dermittee forther agrees to held and
by the negligence of the Permittee secured by the submitted con-	ibility for any accident, loss or damage to persons or property caused
this permit, or any other permits that may be granted pursuant th	tificate of insurance, arising out of the work undertaken pursuant to pereto. I, the applicant, have read and understand the front and
back of this application and will abide by its rules and regulati	ons.
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Signature of Applicant Jeans /// (Mein	Date 3 1/1 - Of o
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Traffic Engineer	Senior Civil Engineer

Inspector 1

#### DEPARTMENT OF DEVELOPMENT SERVICES

RECEIPT OF FEES FOR LAND DEVELOPMENT ACTIVITIES

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THE COTT	NI TIE CO	

Project Name: Young L	entill Manitoria	Developer:		
Address: Los pivos,	El Mar, Silver Via Mirando, Sila	Project No:	Row	06-38

Check No.: 10554 Received By: SAN Date: 3 16/06

11399/	,	
ACTIVITY	ACCOUNT	FEES PAID
Boundary Adjustment (\$1,000/Application)	100-305-7735	
Certificate of Compliance (\$1,000/Application)	100-305-7735	
Certificate of Correction (\$100/Fee)		
Drainage Fee (See Schedule)	232-305-7712	
Easement Dedication (\$1,000/Application)	100-305-7735	
Final/Parcel Map Plan Fee (\$1,000 Sheet)	100-305-7735	-
Grading Permit Fee (\$100/Permit)	100-305-7235	
Grading Plan Check Fee (See Schedule)	100-305-7735	
Improvement Plan Administrative Fee (\$100 Sheet)	100-305-7735	
Improvement Plan Check Fee (See Schedule)	100-305-7735	
Inspection Fee (See Schedule) 22 new Wells	100-306-7737	16600.00
Merger (\$800/Application)	100-305-7735	
Minor Development Review (\$500/Lot)	100-306-7737	
Miscellaneous (CIP Plans, Blueprints, Photocopies, etc.)	100-305-7736	
Park Fee (See Schedule)	411-305-7630	

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13325 Civic Center Drive, Poway, CA 92064-5755 (858) 668-4600

GEOSYNTEC CONSULTANTS, INC.	1.055
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11305 Rancho Bernardo Road, Suite 101 San Diego, California 92127 (858) 674-6559 • Fax (858) 674-6586

#### **FAX COVER SHEET**

TO:	Joann							
FIRM:	City of Poway							
FAX NO.:	(858) 665-12	12			· · · · · · · · · · · · · · · · · · ·			
FROM:	Sean McClai	n						
SUBJECT:	Right-of-way Permit							
	GES INCLUDI	NG COVER SHE	er					
SENT BY:	SM	DATE:	17 March 2006	_ TIME:	_10:32 AM			
MESSAGI	E							

P.O. BOX 789 POWAY CA 92074

# AND SECURITIES

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15 March 2006

City of Poway Planning Department 13325 Civic Center Drive Poway, CA 92064

Subject:

Information for Right-Of-Way Permit

Poway Landfill Poway, California

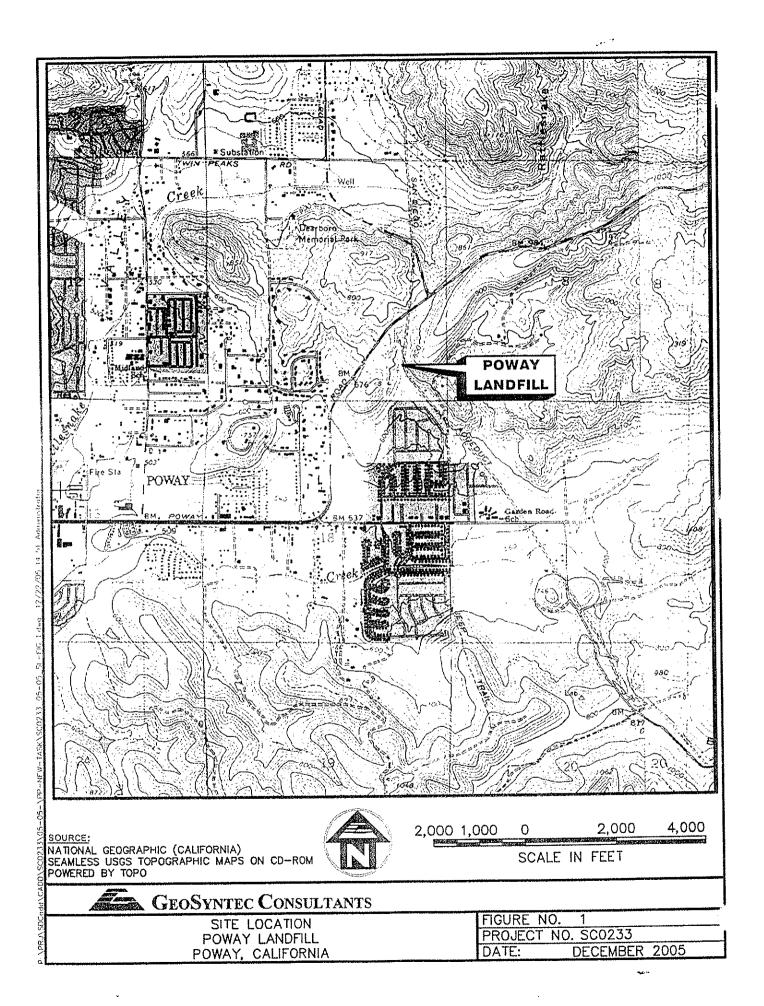
GeoSyntec Consultants (GeoSyntec) is providing this information on behalf of the County of San Diego, Department of Public Works, Landfill Management (the County) for activities associated with the Poway Landfill (site). The site is located on the south side of Poway Road at 14900 Poway Road in the City of Poway (Figure 1). GeoSyntec is currently performing a study to evaluate the chemical quality of subsurface soil vapor in the residential community adjacent to the southwest property boundary of the site (Figure 2). The following information is provided for the public right-of-way permit:

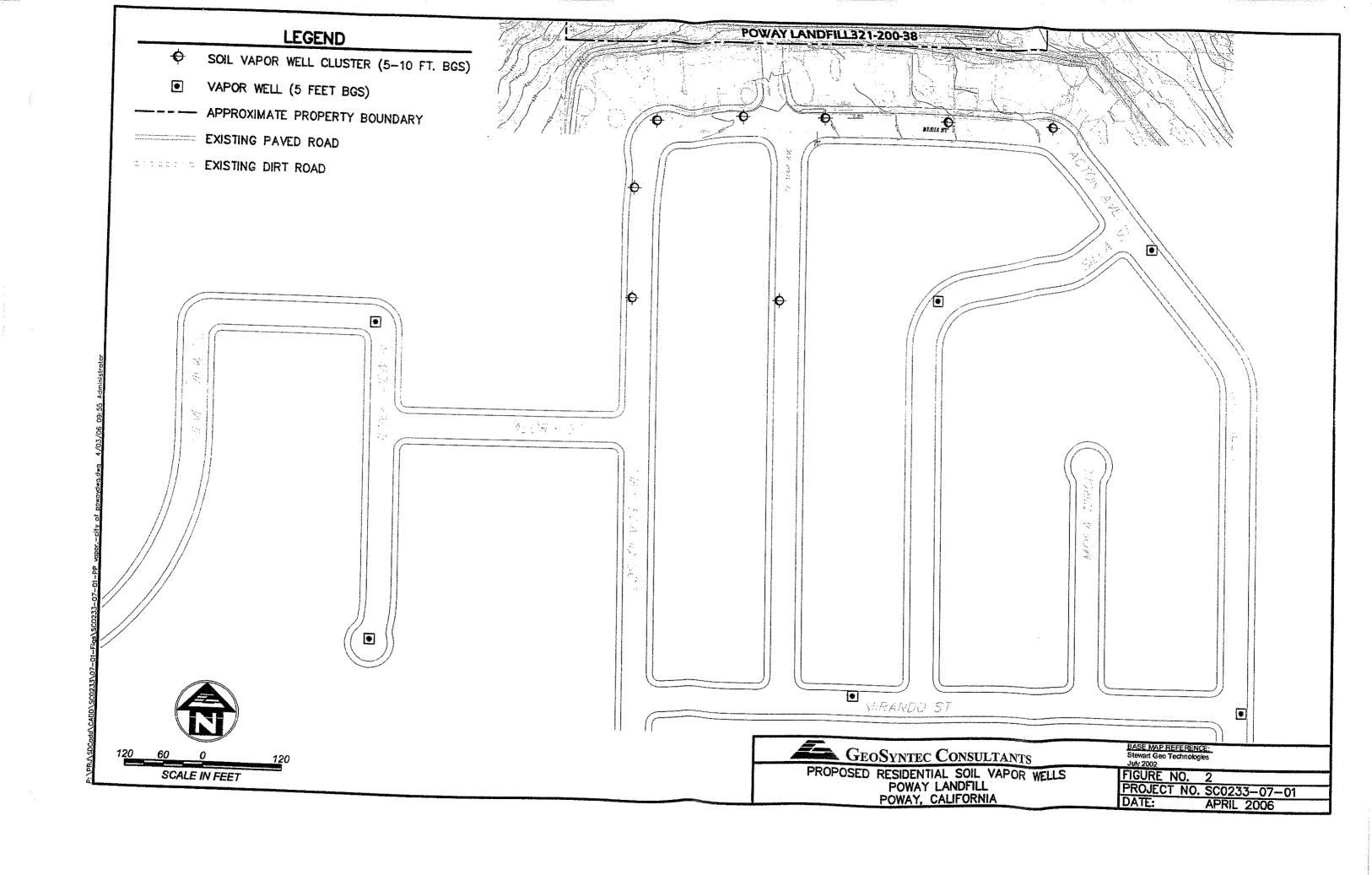
- Revised Work Plan for Downgradient Soil Vapor Sampling (Attachment 1);
- Soil Vapor well Construction Diagrams (Attachment 2)
- Traffic Control Plan (Attachment 3);
- Certificate of Insurance (Attachment 4); and
- Vironex Drilling C-57 License (Attachment 5).

The offsite work for the City of Poway right-of-way permit is discussed in Task 2 and 3 in the Revised Downgradient Soil Vapor Sampling Work Plan. If you have any questions or require additional information, please contact me at (858) 674-6559, or contact Mr. Barry Pulver at the County at 858-495-5480.

Sincerely,

Sean McClain Project Manager





16 March 2006

Barry Pulver, P.G., C.Hg., C.E.G. County of San Diego, Department of Public Works Landfill Management 5201 Ruffin Road, Suite D San Diego, CA 92123

Subject:

Revised Downgradient Soil Vapor Sampling Work Plan

Poway Landfill Poway, California

Dear Mr. Pulver:

On 9 March 2006, GeoSyntec Consultants (GeoSyntec) submitted a work plan to the Regional Water Quality Control Board (RWQCB) and County of San Diego Local Enforcement Agency (LEA) to further evaluate apparent subsurface soil vapor quality in the residential community downgradient of the Poway Landfill (the site) (GeoSyntec, 2006). On 10 and 13 March 2006, GeoSyntec received comments from the RWQCB and LEA, respectively (RWQCB and LEA, 2006). Pursuant to these comments, GeoSyntec has prepared this revised Downgradient Soil Vapor Sampling Work Plan.

#### BACKGROUND

The site is located on the south side of Poway Road at 14900 Poway Road in Poway, California (Figure 1). In 2004 and 2005, an active soil vapor survey was conducted along the southern site boundary and within the public right-of-way of Dehia Street south of the site (GeoSyntec 2004 and 2005). Relatively low concentrations of volatile organic carbons (VOCs) were detected in soil vapor near the southern property boundary and beneath Dehia Street. The primary constituent of concern (COC) detected in soil vapor samples collected during the two independent soil vapor surveys was benzene (Figure 2). The highest concentration of benzene identified in soil vapor sampling conducted in 2004 was 68 parts per billion-vapor by volume (ppbv) in a sample collected upgradient of the residences from boring SG-9. The highest concentration of benzene identified in soil vapor sampling conducted in 2005 was 49 ppbv in a sample collected in the City of Poway right-of-way of Dehia Street downgradient of the residences from boring SG-10. However, based on the type of constituents detected in soil vapor samples collected from Dehia Street, it appears that other sources besides landfill gas from the

Mr. Barry Pulver 16 March 2006 Page 2

Poway Landfill may be contributing to the chemical quality of soil vapor in the residential community.

Based on VOCs detected in soil vapor in the southern portion of the site and the potential hypothetical risk to the residential community adjacent to the southwest site boundary, three vapor wells were installed along the southern property boundary to further evaluate potential hypothetical impacts to the adjoining residents (Figure 2). Similar to the previous soil vapor data, benzene was the primary COC detected in soil vapor samples collected from the vapor wells at concentrations ranging from 19 ppbv (PVP-2A) to 140 ppbv (PVP-1) (Figure 2).

#### SCOPE OF WORK

The objectives of the work described herein are to obtain the necessary data to update the vapor phase human health risk assessment and to evaluate potential vapor migration from the site to the residential community. The following tasks will be performed to achieve the project objectives:

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Task 2: Evaluate Subsurface Utilities

Task 3: Install and Sample Soil Vapor Wells in the City of Poway right-of-ways

Task 4: Perform Soil Vapor Sampling on Residential Properties

Task 5: Prepare Work Plan to Perform Indoor Air and/or Below Slab Soil Vapor Sampling

Task 6: Update Human Health Risk Assessment

Task 7: Perform Engineering Feasibility Study

Task 8: Prepare Report

#### TASK 1: INSTALL AND SAMPLE ONSITE SOIL VAPOR WELLS

The purpose of this Task is to evaluate the radius of influence of landfill gas extraction wells located near the toe of the landfill and to further evaluate the performance of the landfill gas extraction system to control vapor migration. Four soil vapor well clusters will be installed within the refuse and within the soil directly below the refuse at the toe of the landfill. An additional soil vapor well cluster will be installed between the



Mr. Barry Pulver 16 March 2006 Page 3

desiltation basin and the southern site boundary (Figure 3). In addition, two background soil vapor wells will be installed near the northern and eastern site boundaries.

The vacuum from the vapor wells will be measured when the landfill gas extraction system is on and when the system has been shut down for 48 hours to evaluate the radius of influence of landfill gas extraction wells near the toe of landfill.

Soil vapor samples will be collected from vapor well clusters screened in the waste and soil directly below waste and from selected vapor wells located at the southern site boundary. Soil vapor samples will be collected when the landfill gas system is on and also when the system has been shut down for 48 hours to evaluate the landfill gas systems performance to control landfill gas migration. Soil vapor wells will be installed and sampled as described in Task 3 below.

Storm water runoff from Poway Road flows into a concrete channel located on the east property boundary where it discharges and infiltrates in the desiltation basin on the southern property boundary (Figure 3). Soil vapor samples are not recommended in the desiltation basin due to the presence of storm water infiltrating and filling in the pore space in the sample locations. Therefore, one surface water sample will be collected in the concrete channel where storm water enters the site. In addition, soil samples will be collected from three locations within the desiltation basin. Soil samples will be collected from each boring at depths of 2.5 and 5 feet bgs. The surface water and soil samples will be analyzed for VOCs by EPA Method 8260.

#### TASK 2: EVALUATE SUBSURFACE UTILITIES

Potential subsurface pathways for vapor transport include vapor migration through permeable fill material surrounding utilities installed within the subsurface. Further, leaking sanitary systems may affect the chemical quality of soil vapor. GeoSyntec will review storm water and sewer as-built construction drawings and engineering specifications for City of Poway right-of-ways of Sunset View Road, Dehia, Mirando and Silla Streets, Los Olivos, El Mar and Acton Avenues to determine the location and construction specifications of these utilities in the study area. This analysis will be used to select soil vapor sampling locations adjacent to underground utilities.



Mr. Barry Pulver 16 March 2006 Page 4

# TASK 3: INSTALL AND SAMPLE SOIL VAPOR WELLS IN THE CITY OF POWAY RIGHT-OF-WAYS

Based on VOCs detected in soil vapor samples collected in the southern portion of the site and beneath Dehia Street and El Mar Avenue south of the site, vapor wells will be installed within the residential community downgradient of the site to evaluate apparent subsurface soil vapor quality in the residential community (Figure 3). Eight soil vapor well clusters and six single soil vapor wells will be installed within the City of Poway right-ofways of Sunset View Road, Dehia, Mirando and Silla Streets, Los Olivos, El Mar and Acton Avenues. The installation of vapor wells will allow for the evaluation of background soil vapor quality, soil vapor quality at the site and in the residential community.

The vapor wells will be installed within small diameter borings advanced with a direct push rig. Department of Toxic Substances Control (DTSC) guidelines require that the minimum amount of soil vapor sampling needed in the vertical direction to be collected at depths of 5 and 15 to 20 feet bgs (DTSC, 2004). However, depth to groundwater measured during the last two consecutive monitoring events in monitor wells POGW-12, -15, -17A and -18A, located in the residential community, ranged from 7 to 18 feet bgs. Therefore, soil vapor well clusters will consist of wells placed at approximate depths of 5 and 10 feet below ground surface (bgs). If groundwater is encountered in the locations of the soil vapor clusters or moisture is observed (i.e. capillary fringe) in the soil at a depth of 10 feet bgs, a single soil vapor well will be constructed at a depth of 5 feet bgs. Single vapor wells will be placed at depths of 5 feet bgs. Proposed soil vapor well construction details are provided on Figure 4.

GeoSyntec will notify Underground Service Alert of the intent to drill at the site; subcontract a geophysical survey of potential subsurface utilities or other underground obstructions; and obtain the necessary permits from the City of Poway and the County of San Diego Department of Environmental Health (DEH).

Soil vapor wells installed in the residential community will be sampled bi-weekly for one month, monthly for two months, then quarterly for three consecutive events. However, depending on the initial soil vapor sampling results, selected vapor wells may be sampled on a more or less frequent basis.



In addition to the work described above, the potential exposure to landfill-related constituents migration through utilities will be evaluated. Four soil vapor samples will be collected from within the fill material surrounding utilities located within the City of Poway right-of-way of El Mar Avenue and Dehia Street to evaluate potential vapor migration from the landfill through utilities. The vapor wells will be installed within small diameter borings advanced with hand auger equipment to the top of the fill material surrounding utilities.

Soil vapor sampling and testing procedures will be conducted in accordance with the County of San Diego Department of Environmental Health Site Assessment and Mitigation Manual and DTSC soil vapor sampling guidelines. Soil vapor samples will be collected in 1-liter Summa canisters using dedicated flow controllers calibrated by the analytical laboratory at a flow rate of 200 ml/min. Prior to collection of soil vapor samples, each of the new proposed soil vapor wells will be allowed to equilibrate for a minimum of 48 hours. Following equilibration and prior to collecting samples, three "dead space" volumes will be purged. Soil vapor samples will be collected in 1-liter Summa canisters using dedicated flow controllers calibrated by the analytical laboratory at a flow rate of 200 ml/min. In addition to the vapor samples collected from the wells, three duplicate samples, three ambient air field blank samples, and one trip blank sample will be collected per each sampling event. Soil vapor and quality control samples will be analyzed for VOCs by EPA Method TO-15 which will include three additional constituents to the list (carbon disulfide, trans-1,4-dichloro-2-butene and methyl iodide) and fixed gases by Method ASTM-D-1946 by Air Toxics Ltd. in Folsom, California.

# TASK 4: PERFORM SOIL VAPOR SAMPLING ON RESIDENTIAL PROPERTIES

Based on the results of samples collected from vapor wells advanced in the Čity right-of-ways, a soil vapor survey will be performed on selected residential properties. Based on the initial findings, the soil borings will be advanced near each of the residential properties located adjacent to the south of the landfill on Dehia Street between El Mar and Los Olivos Avenue have been selected; however, other properties may be sampled if warranted (Figure 3). Soil borings will be advanced using small diameter drive rods to facilitate collection of soil vapor samples at a depth of 5 feet bgs. At three locations, soil



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vapor samples will be collected at a depth of 2.5, 5 and 10 feet bgs to develop vertical profiles. Up to two locations per residential property, soil samples will be collected at depths of 1, 2.5 and 5 feet bgs and analyzed by ASTM D 2210 to develop soil moisture profiles. Soil samples for soil moisture analysis will also be collected at 2.5, 5 and 10 feet bgs at the three locations where vertical profiles are advanced. Temporary soil vapor probes will be constructed within the small drive rod using dedicated nylon tubing for each soil vapor sample.

Soil vapor samples will be collected in 1-liter Summa canisters described in Task 3. Prior to collection of soil vapor samples, each temporary soil vapor probe will be allowed to equilibrate for a minimum of 1 hour. In addition to the vapor samples collected from the temporary borings, one duplicate sample, one ambient air field blank sample, and one trip blank sample will be collected each day sampling is performed.

Written permission from selected residential property owners will be required prior to collecting soil vapor samples next to the residential home pads. GeoSyntec will coordinate and assist the County in obtaining access to each parcel.

# TASK 5: PREPARE WORK PLAN TO PERFORM INDOOR AIR SAMPLING AND/OR BELOW SLAB SOIL VAPOR SAMPLING

A detailed analysis of the need to perform indoor air sampling and/or below slab soil vapor sampling (collectively referred to as indoor air sampling) of adjacent residences will be performed. Pending the results of this analysis, indoor air sampling may be performed following recently developed, EPA and DTSC guidance. Indoor air sampling may aid to determine whether potential landfill-related COCs affect indoor air quality.

Typically, indoor air contains dozens of chemicals due to normal household products. GeoSyntec will develop an indoor air sampling plan which may include the following:

• Pre-Sampling surveys for other chemicals (paints, solvents, fuels, dry-cleaning, adhesives, new materials). Prior to sampling, this survey will be distributed to each of the target residences to identify potential sources of constituents that may be present in specific homes that are not be due to landfill gas;



- Building Design/Construction. The ventilation systems for each residence affect vapor intrusion pathways and exposure parameters;
- Outdoor Sources. Lawn maintenance procedures, residential automotive repair/maintenance, and other activities that may contribute to constituents detected in soil gas in the residential community; and
- Meteorology (barometric pressure, temperature, precipitation and wind).

After the appropriate regulatory agencies approve the work plan and right of entry agreements are executed with the property owners, the work plan to collect indoor air samples will be implemented.

## TASK 6: UPDATE HUMAN HEALTH RISK ASSESSMENT

Soil vapor data collected from the vapor wells and vapor samples collected near the residential properties will be used to update the human health risk assessment described in the Report of Waste Discharge (ROWD) (GeoSyntec, 2005). The updated human health risk assessment will compare soil vapor data from the samples previously collected near the southern site boundary to the new data collected during sampling events from the wells located in the residential community. The updated human health risk assessment will be performed using the DTSC modifications to the Johnson and Ettinger (J&E) model and VAPRISK DEH model. The results of the updated human health risk assessment will be presented in the summary report.

## TASK 7: PERFORM ENGINEERING FEASIBILITY STUDY

Based on the findings of the soil vapor survey and human health risk assessment, a detailed analysis of remedial technologies and associated alternatives to mitigate potential landfill-related soil vapor impacts from the site will be completed, if warranted.

A preliminary screening of remedial alternatives has been performed. Several technologies have been evaluated that may be effective in mitigating potential landfill-related soil vapor impacts. Potential remedial alternatives are based on COC characteristics, the known extent and concentrations of COCs, remediation objectives, and previous experience at other sites. The following remedial alternatives have been considered for the Poway Landfill:



- Soil Vapor Extraction;
- Landfill Gas Extraction System Enhancement;
- Air Curtain;
- Desiltation Basin Enhancement;
- Hydrologic Barriers;
- Natural Attenuation;
- Monitoring; and
- · No Action.

Pilot studies for viable remedial measures will be performed as necessary to refine the evaluation of mitigation alternatives. The feasibility of each alternative will be evaluated based on the effectiveness, implementability, and cost. Based on this evaluation and in consultation with the RWQCB, the best-suited alternative will be implemented.

## TASK 8: PREPARE REPORT

A summary report will be prepared following the completion of Tasks 1 through 7. This report will describe field procedures, results of the soil vapor sampling and updated human health risk assessment. In addition, the site conceptual model will be updated based on the findings of the work described herein. Lastly, a conceptual design for the best-suited remedial alternative will be provided, if warranted.

The final report will be submitted to the RWQCB and uploaded into the GeoTracker data base.

## PROJECT SCHEDULE

Work will commence immediately after receiving the necessary permits and access agreements. It is anticipated that the encroachment permit from the City of Poway and property access agreements from selected property owners may take up to 2 months for approval. Soil vapor probe installation and soil vapor sampling could be completed within two to three weeks. Approximately six weeks will be required to evaluate analytical data, update the human health risk assessment and perform the feasibility study. Based on this schedule it is anticipated that the summary of findings report would be submitted to the RWQCB approximately two months after obtaining the permits and access agreements.



PROPOSED WORK	SCHEDULE
Task 1 - Install and Sample Onsite Soil Vapor Wells	March - April 2006
Task 2 - Evaluate Subsurface Utilities	March 2006
Task 3 - Install and Sample Soil Vapor Wells in the City of Poway Right-of-Ways	March - April 2006
Task 4 - Perform Soil Vapor Sampling on Residential Properties	March - April 2006
Task 5 - Prepare Work Plan to Perform Indoor Air Sampling	May 2006
Task 6 - Update Human Health Risk Assessment	May - June 2006
Task 7 - Perform Engineering Feasibility Study	June 2006
Task 8 - Prepare Report	July 2006

If you have any questions or require additional information regarding the scope of work described herein, please contact the undersigned at (858) 674-6559.

Sincerely,

Sean McClain Project Manager

Sam Williams, P.G. CHg.

Project Director

## Enclosures:

Figures:

Figure 1 - Site Location

Figure 2 – Primary VOC concentrations in Soil Vapor

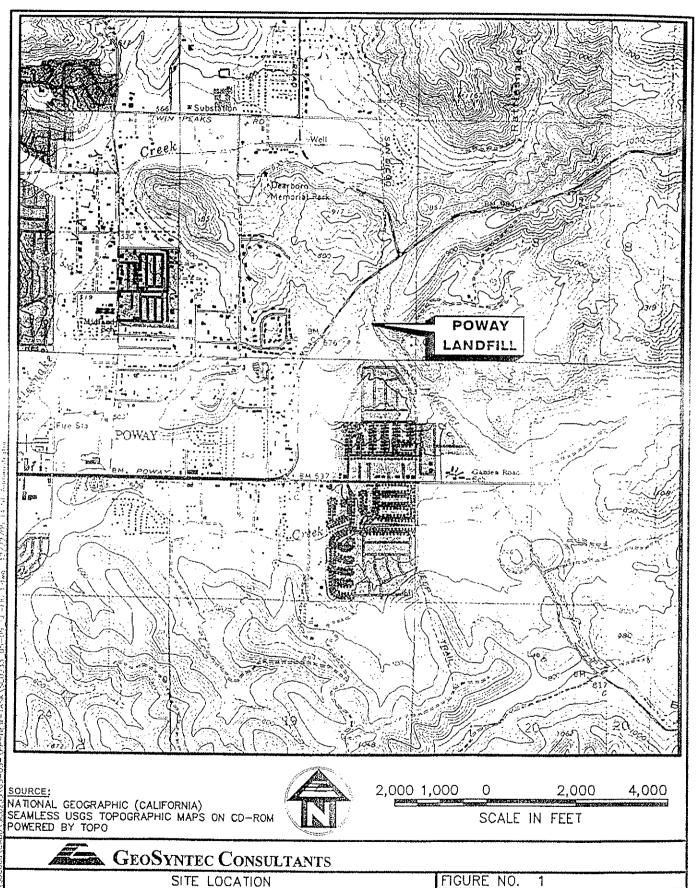
Figure 3 - Proposed Residential and Site Soil Vapor Well Locations

Figure 4 – Soil Vapor Well Construction

### REFERENCES

- Department of Toxic Substances Control, 2004. Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air, December 2004.
- GeoSyntec Consultants, 2006. Downgradient Soil Vapor Sampling Work Plan, Poway Landfill, prepared for County of San Diego, Department of Public Works, March 2006.
- GeoSyntec Consultants, 2005. Updated Report of Waste Discharge and Engineering Feasibility Study, Poway Landfill, prepared for County of San Diego, Department of Public Works, December 2005.
- GeoSyntec Consultants, 2004. Phase II Evaluation Monitoring Program, Poway Landfill, prepared for County of San Diego, Department of Public Works. August 2004.
- San Diego County Department of Environmental Health Local Enforcement Agency, 2006. Comments on Work Plan, Email Correspondence from Kerry McNeill of LEA to Barry S. Pulver San Diego County Department of Public Works Landfill Management, 13 March 2006.
- San Diego Regional Water Quality Control Board, 2006 Downgradient Soil Vapor Sampling Work Plan Comments, email from Kelly Dorsey RWQCB to Barry S. Pulver San Diego County Department of Public Works Landfill Management, 10 March 2006.





PROJECT NO. SC0233

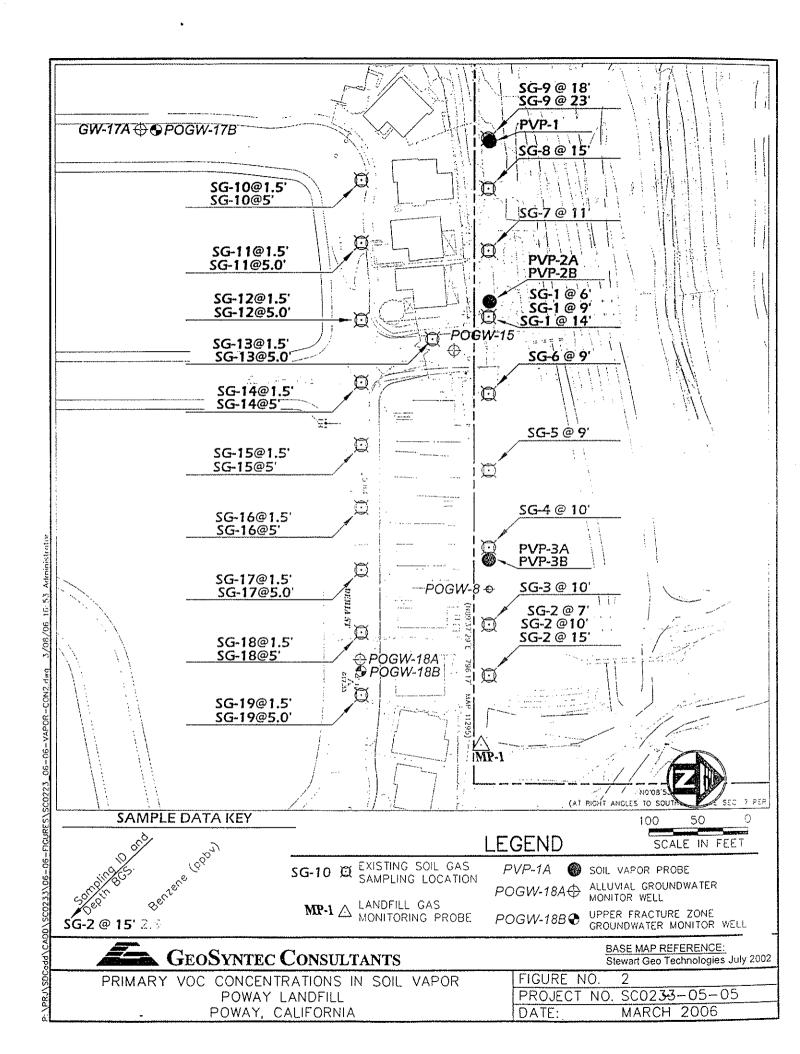
DECEMBER, 2005

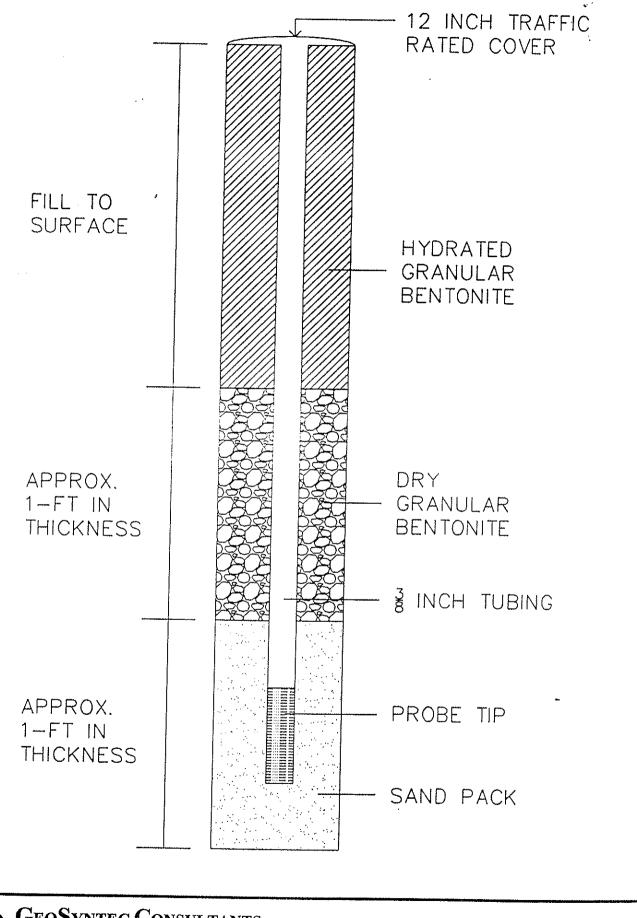
DATE:

POWAY LANDFILL

POWAY, CALIFORNIA

COUST BOY





GEOSYNTEC CONSULTANTS

VAPOR WELL CONSTRUCTION POWAY LANDFILL POWAY, CALIFORNIA

FIGURE NO.

PROJECT NO. SC0233-06-06 DATE: MARCH 2006



# **GeoSyntec Consultants**

## Proposed Soil Vapor Well Cluster Construction

Site:	Poway Landfill	Date:	3/15/06			
Well ID:	Soil Vapor Well Cluster	Drilling Method:	Direct Push			
Drilling Company:	Vironex	Proposed Boring Depth:	5-10 feet bgs			
Drillers:		Proposed Boring Diam:	2-inches			
Geologist:	Sean McClain	Proposed Well Depth:	5-10 feet bgs			
		Well Diameter:	2 Vapor well cluster, each			
	4 0		1/4 -inches diameter			
3 ft Concrete	4" PVC Riser w/	el Vault  Locking Cap  Proposed Well Constru  Material: Inside Diamter:	etion:  1/4 " nylon tubing			
	Annua Annua Commo Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua Annua	Proposed Filter Pack:	2			
0.5 ft Hydrate Benton	a sound framery or of framery	Type/Brand:	Sand			
	Annual Hydrated 4 ft	Amount Used:	6" above & 6" below			
Î	1.5 "	Placement Method:	Tremie			
0.5 ft On Benton:		Proposed Seal:	& Canalar Bentonite			
<u>*</u>	1 4-mone: Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual Annual	Amount Used:	0.5, - 2' dry; 0.5' - 4, hydrated above			
		Vol. Fluid Added:				
1 ft Frite		Set-up Time:				
Pack (Sane		Placement Method:	T			
			Tremmie			
	Dry Bentonite 2 ft		<b>***</b>			
	₹ 2-inch	Type/Brand:	Concrete			
	Borehole Diam.	Amount Used:				
		Vol. Fluid Added:				
		Placement Method:				
	6-inch long	Proposed Well Completio	n:			
	stainless steel wire screen	Above Grade / Belo	w Grade / Flush Mounted			
	Filter	Guard Posts? Y /	N.			
	Pack 1 ft (Sand)	Pad Size:	4X3			
		Cover Type/Size:	7-inch steel Flush Mount			
		Comments:				
	2⊣nches Borehole Diam.	<u> </u>				
		Geologist Signature:				



# **GeoSyntec Consultants**

# Proposed Single Soil Vapor Well Construction

.ie:	Pow	ay Landf	ill		Date:	3/10	/06		
Well ID:			apor Well		Drilling Method:		t Push		
Drilling C	Company: Viro				Proposed Boring Depth:	5 feet			
Drillers:					Proposed Boring Diameter: 2 Proposed Well Depth: 5		2-inches		
Geologist	: <u>Sear</u>	McClair	1	 			bgs		
			• •		Well Diameter:	1/4 -ir	nches diameter		
3 ft Conc	Hydrated Bentonite  Dry Bentonite  Filter Pack (Sand)	Nylon 1/4-i		7" Steel Vault  C Riser w/ Locki  6-inch stainles steel wire screen	Proposed Well Constr ing Cap  Material: Inside Diamter:  Proposed Filter Pack: Type/Brand: Amount Used: Placement Method  Proposed Seal: Type/Brand:	i:	Sand I ft Tremie  Granualar Bentonite  0.5" dry and 0.5" hydrated  Tremmie  Concrete		

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Insured	Coverage Type/Expiration Date	Expiration D	ate Endorsement	ment Job or Project	Contact	Renewal Needed
Geosyntec Consultants, inc Contract No. 05-038, 06-0	General ☑ 9/1/2006 Auto ☑ 9/1/2006	Proful [8]	9/1/2006 General 9/1/2006	ROW Permit	Pat Phelps	<b>\</b>
Contract StarvEnd -	<b>&gt;</b>	Misc.		Days to Expiration: 169		Approved
issa, Khalid Contract No. 05-040	General  Auto	Profut   Excess	General	ROW Permit	— Pat Phelps	<b>&gt;</b>
Contract StartEnd -	Wkrs Comp	Misc. [7]	5/16/2005	Days to Expiration:		Approved
Kajima USA, Inc. <i>Contract No.</i> 05-041	General S 7/1/2006 Auto S 7/1/2006	Proful [] Excess [2]	None 7/1/2006	ROW Permit	Pat Phelps	<b>\(\)</b>
Contract Start/End	Wkrs Comp 🗷 7/1/2006	Misc.		Days to Expiration: 107	j	Rejected
Mark V. Agee Contractors, Inc.  Contract No. 05-047 & 05-	General 🖾 972412006 Auto 🗌	Proful   Excess	General 9/24/2006	ROW Permit	Pat Phelps	<b>\( \)</b>
Contract Start/End	Wkrs Comp   12/15/2006	Misc.		Days to Expiration: 192		Rejected
Marrokal Construction Company  Contract No. 05-023	General S 7128/2006 Auto	Profnt [] Excess []	Ceneral	ROW permit	Pat Phelps	<b>\</b>
Contract Start/End -	Wkrs Comp 🛭 1/1/2007	Misc.	J	Days to Expiration: 134		Approved
Miller Brooks Environmental, Inc.  Contract No. 05-103	General S 2/1/2007 Auto S 2/1/2007	Profnt ⊠ Excess □	2/1/2007 None	ROW permit	Pat Pheips	
Contract Start/End -	Wkrs Comp 🖾 2/1/2007	Misc.	i	Days to Expiration: 322		Rejected
Montijo Backhoe Inc. <i>Contract No.</i> 05-108	General S 1112/2006 Auto 🗀	Profnt □ Excess □	General	ROW Permit	Pat Phelps	
Contract Start/End -	Wkrs Comp 🖾 6/1/2006	Misc.	<u> </u>	Expired		Approved
Neal Electric, Inc. Contract No. 05-149	General S 4/12006 Auto S 4/12006	Proful [] Excess [7]	General 4/1/2006	ROW Permit	Pat Phelps	ı
Contract StartEnd	Wkrs Comp [7] 4/1/2006	Misc.	<u></u>	Days to Expiration: 16		Approved
				A MARKATAN CARA SA SASAN CARA SA		•

# Insurance Certification Record

Department: Development Services

Insured	Geosyntec Consultants, inc	Approved
Job or Project	ROW Permit	]
Contact	Pat Phelps	
Contract No.	05-038, 06-009, 06-038	
General Liability	9/1/2006 Professional Liability V 9	7/1/2006
Auto Liability	Ø 9/1/2006 Wkrs Compensation      Ø 9	/1/2006
Excess Liability	✓ 9/1/2006 Misc. Liability	
Endorsement	General Renewal Needed	$ \mathbf{\nabla}$
Notes		
ROW #06-038 added on	3/20/06. SS	
		:
		:
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		•

# MARSH



# CERTIFICATE OF INSURANCE CERTIFICATE NUMBER ATL-000632666-06

ATL-000632666-06

PRODUCER

INSURED

Marsh USA inc. 1560 SAWGRASS CORPORATE PKWY. SUITE 300

SUNRISE, FL 33345-9010

Altn: WILLIAM BARROWS FtLauderdale.certs@marsh.com

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER OTHER THAN THOSE PROVIDED IN THE POLICY. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES DESCRIBED HEREIN.

COMPANIES	AFFORDING	COVERAGE
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S81127-ALL-CAS2-04-05

**BOCAR ALL4** 

GEOSYNTEC CONSULTANTS, INC. 5901 BROKEN SOUND PARKWAY NW, SUITE 300 BOCA RATON, FL 33487-2775

COMPANY Α COMMERCE AND INDUSTRY INSURANCE COMPANY COMPANY

AMERICAN INTERNATIONAL SPECIALTY LINES

В

COMPANY

C INSURANCE COMPANY STATE OF PENNSYLVANIA

COMPANY

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COVERAGES This certificate supersedes and replaces any previously issued certificate for the policy period noted below. THIS IS TO CERTIFY THAT POLICIES OF INSURANCE DESCRIBED HEREIN HAVE BEEN ISSUED TO THE INSURED NAMED HEREIN FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THE CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, CONDITIONS AND EXCLUSIONS OF SUCH POLICIES, AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS		
Α	GENERAL LIABILITY	GL4178618	09/01/04	09/01/05	GENERAL AGGREGATE	\$	2,000,000
	X COMMERCIAL GENERAL LIABILITY				PRODUCTS - COMP/OP AGG	\$	2,000,000
	CLAIMS MADE X OCCUR				PERSONAL & ADV INJURY	\$	1,000,000
	OWNER'S & CONTRACTOR'S PROT	•			EACH OCCURRENCE	S	1,000,000
					FIRE DAMAGE (Any one fire-	S	100,000
	X SIR: 100.000			:	MED EXP (Any one person	S	25.000
$\sim$		(CA5053937 (AOS)	09/01/04	109/01/05	COME NED SINGLE LIMIT	S	1,000,000
Α	X 497 AUTO	:CA1955450 (TX)	09/01/04	09/01/05			
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	X HIRED AUTOS X NON-OWNED AUTOS				BOBILY INJURY (Per accident)	S	
					PROPERTY DAMAGE	S	
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					EACH ACCIDENT	\$	
						\$	
В	EXCESS LIABILITY	BE8085625	09/01/04	09/01/05		\$	10,000,000
	X UMBRELLA FORM				AGGREGATE	\$	10,000,000
	OTHER THAN UMBRELLA FORM			İ	SIR:	\$	10,000
4	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY	9682856 (AOS)	09/01/04	09/01/05	X   WC STATU-   OTH-		o feet and
Δ.		9682857 (CA)	09/01/04	09/01/05		\$	1,000,000
0	THE PROPRIETOR/ PARTNERS/EXECUTIVE  X INCL	WC9682858 (NJ)	09/01/04	09/01/05	EL DISEASE-POLICY LIMIT	\$	1,000,000
	OFFICERS ARE: EXCL				EL DISEASE-EACH EMPLOYEE	\$	1,000,000
	OTHER					-	
- 1	1	195-19-04	09/01/04		Each Claim / Aggregate		5,000,000
	Contr. Poll. Liab. Claims Made Form			į	SIR: Each Claim		300,000
	RIPTION OF OPERATIONS/LOCATIONS/VEH			1	Incl. Prod. & Completed C	)ps	

CITY OF POWAY IS INCLUDED AS AN ADDITIONAL INSURED EXCEPT FOR WORKERS' COMPENSATION.

CERTIFICATE HOLDER

CANCELLATION

CITY OF POWAY 13325 CIVIC CENTER DRIVE POWAY, CA 92064

SHOULD ANY OF THE POLICIES DESCRIBED HEREIN BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF. CERTIFICATE HOLDER NAMED HEREIN, BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION CR LIABILITY OF ANY KIND UPON THE INSURER AFFORDING COVERAGE, ITS AGENTS OR REPRESENTATIVES, OR THE

MARSH USA INC.

ISSUER OF THIS CERTIFICATE ву: Frances Sigurani

Fances Signam

MM1(3/02)

VALID AS OF: 03/09/05

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

# ADDITIONAL INSURED – OWNERS, LESSEES OR CONTRACTORS – SCHEDULED PERSON OR ORGANIZATION

This endorsement modifies insurance provided under the following:

COMMERCIAL GENERAL LIABILITY COVERAGE PART

## SCHEDULE

Name Of Additional Insured Person(s) Or Organization(s):						
ity of Poway	Location(s) Of Covered Operations					
3325 Civic Genter Drîve						
oway, CA 92064						
,	· . ·					
ormation required to complete this Schedule, if not shown a						

- A. Section II Who is An Insured is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule, but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by:
  - 1. Your acts or omissions; or
  - 2. The acts or omissions of those acting on your

in the performance of your ongoing operations for the additional insured(s) at the location(s) designated above. B. With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to "bodily injury" or "property damage" occurring after:

- All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or
- 2. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

858 674 6586

Shum

T-431

P. 02/02 F-576

MAR 2 0 2008 8

## CITY OF POWAY ITY OF POWAY SERVICES DEVELOPMENT SERVICES DEPARTMENT



Right-of-Way Permit No. 06-38 GeoSyntec Consultants Date 3-16-00 Applicant 10875 Rancho Bernardo Road Ste. 200 Address an Diego, CA 92127 Telephone No(s). 588-674-6559 Ex 211 Private development project 

☐ City Capital Improvement project Description of work to be done: Intal Vapr well in Chy of Busy Right of ware. Orller use contracter livence C-57, which 15 A. Component of A Continuous A licera Waiver requested: Can you wante the requirement to solution the Justification: This & the my Colfernia regioned license to Dill with and install wells. FOR OFFICE USE ONLY Approval date Senior Engineer Comments

## ENDORSEMENT NO. 05

This endorsement, effective 12:01 AM,

Forms a part of Policy No:

Issued to: By: 03/22/05

GL 417-86-18

Geosyntee Consultants, Inc.

Commerce & Industry Insurance Company

It is hereby agreed that the following form is added as respects to form CG 20 10 (07 04) attached:

 ${\bf Additional\ Insured-Owners,\ Lessees\ or\ Comractors-Scheduled\ Person\ or\ Organization\ .}$ 

All other terms, conditions, and exclusions shall remain the same.

Authorized Representative

State Of California
CONTRACTORS STATE LICENSE BOARD
ACTIVE LICENSE

---- 705927

EMP CORP

BANNELLAND VIRONEX INC

Classicoscon(s) C57

Etonism Date 05/31/2007



California Home

Thursday, Ma



License Detail Contractor License # 705927

CALIFORNIA CONTRACTORS STATE LICEN

## DISCLAIMER

A license status check provides information taken from the CSLB license data base. Before on this information, you should be aware of the following limitations:

- CSLB complaint disclosure is restricted by law (<u>B&P 7124.6</u>). If this entity is subject to complaint disclosure, a link for complaint disclosure will appear below. Click on the lin button to obtain complaint and/or legal action information.
- Per <u>B&P 7071.17</u>, only construction related civil judgments reported to the CSLB are disclosed.
- Arbitrations are not listed unless the contractor fails to comply with the terms of the arbitration.
- Due to workload, there may be relevant information that has not yet been entered ont Board's license data base.

Extract Date: 03/16/2006

* * * Business Information * * *

VIRONEX INC 1225 E MCFADDEN SANTA ANA, CA 92705 Business Phone Number: (714) 647-6290

Entity: Corporation
Issue Date: 05/04/1995 Expire Date: 05/31/2007

* * * License Status * * *

This license is current and active. All information below should be reviewed.

* * * Classifications * * *

Class	Description
C57	WELL DRILLING (WATER)

* * * Bonding Information * * *

CONTRACTOR'S BOND: This license filed Contractor's Bond number 40078120 in the an \$10,000 with the bonding company

## PLATTE RIVER INSURANCE COMPANY.

Effective Date: 01/01/2004

## Contractor's Bonding History

BOND OF QUALIFYING INDIVIDUAL(1): This license filed Bond of Qualifying Individual I LPM8713332 for TODD WILLIAM HANNA in the amount of \$7,500 with the bonding con FIDELITY AND DEPOSIT COMPANY OF MARYLAND.

Effective Date: 01/16/2004

**BQI's Bonding History** 

* * * Workers Compensation Information * * *

This license has workers compensation insurance with the <u>GRANITE STATE INSURANCE COMPANY</u>

Policy Number: WC1513302 Effective Date: 04/15/2005 Expire Date: 04/15/2006

Workers Compensation History

Personnel List

License Number Request

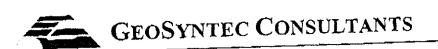
Contractor Name Request

Personnel Name Request

Salesperson Request

Salesperson Name Request

© 2006 State of California. Conditions of Use Privacy Policy



11305 Rancho Bernardo Road, Suite 101 San Diego, California 92127 (858) 674-6559 • Fax (858) 674-6586

# FAX COVER SHEET

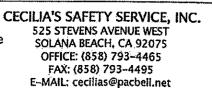
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FIRM:	City of Powa	у			<u></u>
FAX NO.:	(858) 665-12	12			
FROM:	Sean McClair	n			
SUBJECT:	Right-of-way	Permit		······································	
	GES INCLUD	NG COVER SHEE	T		
SENT BY:	SM	DATE:	17 March 2006	TIME:	10:32 AM
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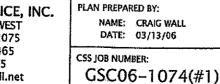
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CATEGORY	ACCOUNT NUMBER	AMOUNT RECEIVED	7 /		COMME	NTS	
Grading Plan Check	5910			-			
Grading Inspection	5920		7				
Final Map Check	5930		1  -				
mprovement Plan Check	5940		1				
mprovement inspection	5950						
Cundary Adjustment	5960	-	i H				The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s
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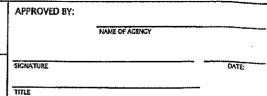












SIGN SPACING

NARROW LANE

WORK AHEAD

W20-

G20-2

END ROAD WORK

ROAD NARROWS

\$ 8:30Am-3:30pm **WORK HOURS** ### M-F



CONTRACTOR TO PROVIDE ACCESS TO DRIVEWAYS
AT ALL TIMES

NOTO 1 AND GOOD SOULL BE PLACED ON ANY AFFECTED CROSS STREET CORDING TO SPEED LIMIT OF OROSS STREET

END ROAD WORK

G20

W20-1

ROAD WORK AHEAD

C12

NARROW LANE

SIGN SPACING

ROAD

NARROWS,

WORK

AHEAD

TRANS.

W20-1

12' MIN.

BUFFER

KEEP RIGHT

TEMPORARY NO PARKING

12' MIN. BUFFER

12' MIN.

7150' FROM INTERSECTION

> TYPE OF WORK: **INSTALLATION OF**

G20-2 ROAD WORK

RIGHT

--- 65' ---TRANS.

-- 25'

**CITY OF POWAY** TRAFFIC CONTROL PLAN FOR: STREET NAME

PAGE 1 OF 6



CECILIA'S SAFETY SERVICE, INC. **525 STEVENS AVENUE WEST** SOLANA BEACH, CA 92075 OFFICE: (858) 793-4465 FAX: (858) 793-4495 E-MAIL: cecilias@pacbell.net

PLAN PREPARED BY: NAME: CRAIG WALL DATE: 03/13/06

GSC06-1074(#2)

CSS JOB NUMBER:

SIGN SPACING

ROAD WORK AHEAD

END ROAD WORK

C20-2

W20-S 150' FROM INTERSECTION

R4-7A

**GEOSYNTEC CONSULTANTS** 11305 RANCHO BERNARDO RD, STE 101 SAN DIEGO, CA 92127 PHONE: (858) 674-6559

TYPE OF WORK: INSTALLATION OF **VAPOR WELLS** 

ROAD W20-1 WORK W20-1 AHEAD 150' FROM INTERSECTION

RIGHT

1R4-7A

50' - 65' --BUFFER TRANS.

G20-2 ROAD WORK

TRANS.

TEMPORARY NO PARKING

12' MIN. 72' MIN.

BUFFER

TEMPORARY NO PARKING

SIGNATURE 1190-H3 TITLE

\$ 8:30Am - 3:30pm **WORK HOURS** M-F

M-3/27/06



CONTRACTOR TO PROVIDE ACCESS TO DRIVEWAYS AT ALL TIMES

CONTRACTOR: APPROVED BY: NAME OF ACTINC THOMAS GUIDE: FAX: (858) 674-6586

C:\TCP\GE\

**CITY OF POWAY** TRAFFIC CONTROL PLAN FOR: STREET NAME PAGE 2 OF 6

SIGN SPACING

NARROW LANE

END ROAD WORK

G20-2 ROAD WORK

Cecilia's Traffic Control)
STATE LIC.# 787634/C31

C:\TCP\GEOS

CECILIA'S SAFETY SERVICE, INC. **525 STEVENS AVENUE WEST** SOLANA BEACH, CA 92075 OFFICE: (858) 793-4465 FAX: (858) 793-4495 E-MAIL: cecilias@pacbell.net

PLAN PREPARED BY: NAME: CRAIG WALL DATE: 03/13/06

**GEOSYNTEC CONSULTANTS** 11305 RANCHO BERNARDO RD, STE 101 SAN DIEGO, CA 92127 PHONE: (858) 674-6559 FAX: (858) 674-6586

**NOT TO SCALE** 

TYPE OF WORK: **INSTALLATION OF VAPOR WELLS** 

THOMAS GUIDE:

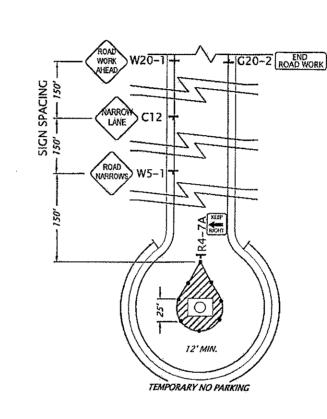
1190-H3

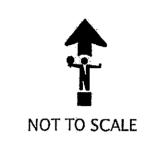
APPRÓVED BY: NAME OF AGENCY SIGNATURE

**CITY OF POWAY** 

TRAFFIC CONTROL PLAN FOR: STREET NAME

PAGE 3 OF 6





\$8:30pm

**WORK HOURS** Block Bellows Colors M-F

CONTRACTOR TO PROVIDE ACCESS TO DRIVEWAYS AT ALL TIMES

W70-1 AND G70-2 SPALL BE PLACED ON ANY AFFECTED CROSS STREET XXXIMG TO SPEED LIMIT OF CROSS STREE

END ROAD WORK

**G20** 

SIGN SPACING

ROAD WORK G20-2

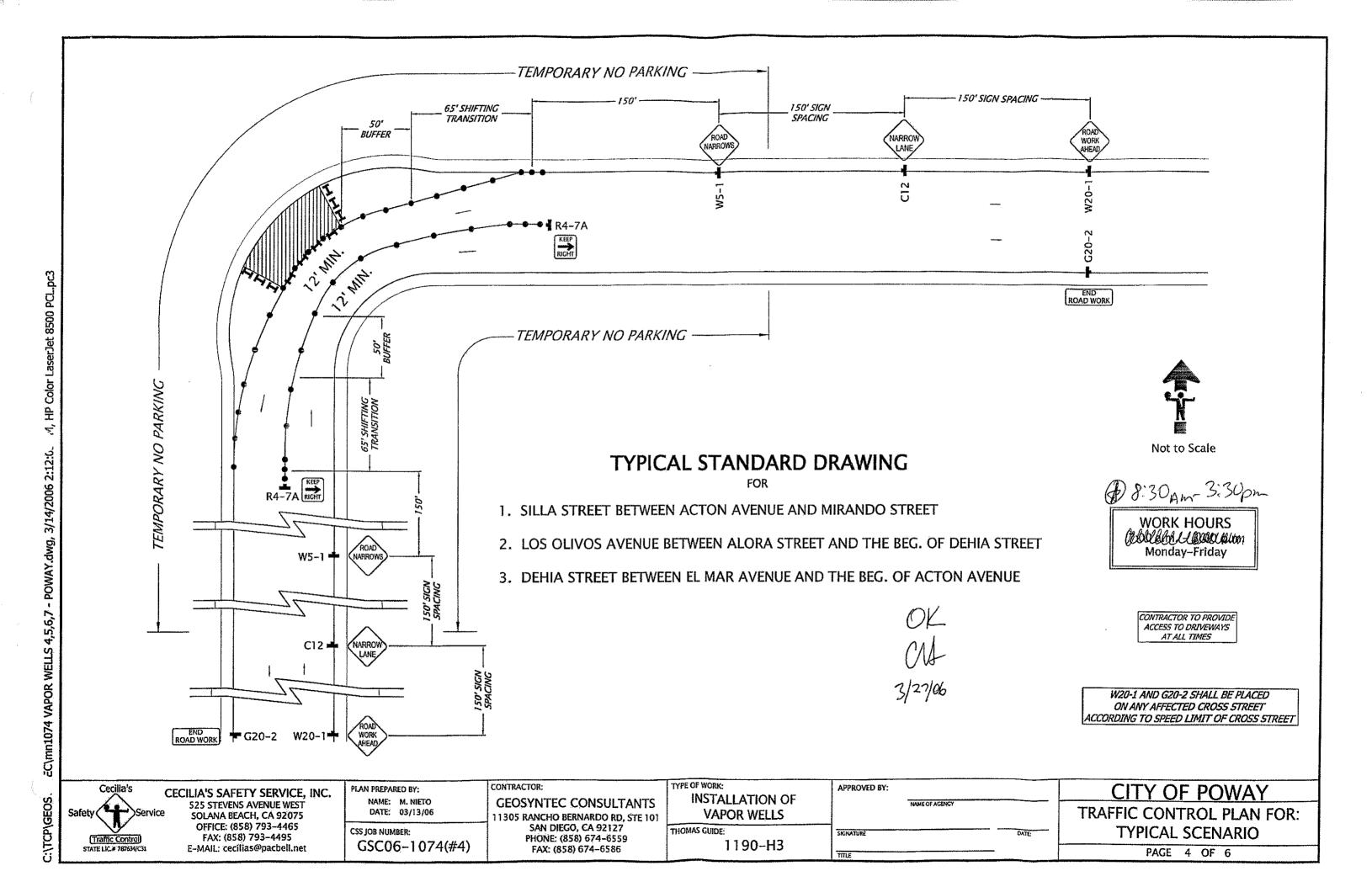
TEMPORARY NO PARKING

\$4€ R4-7A+ 65' 784NS.

CSS JOB NUMBER: GSC06-1074(#3&7)

CONTRACTOR:

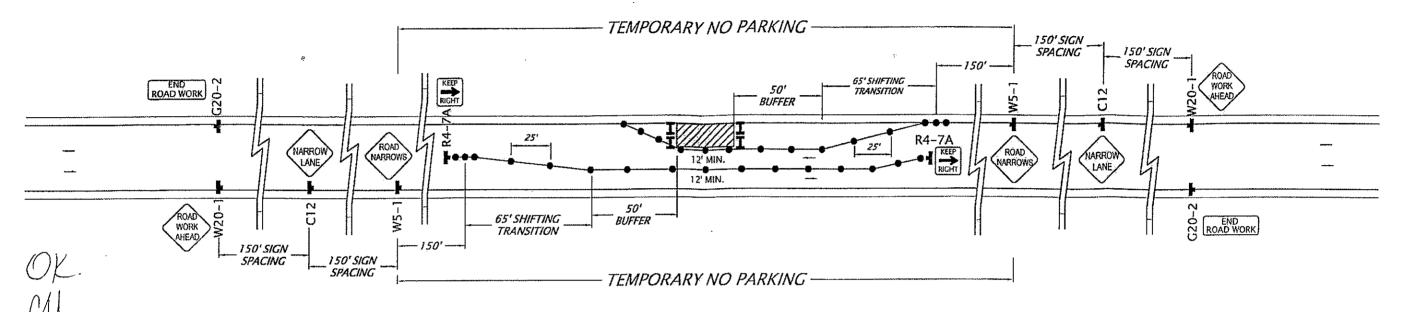
TITLE



C:\TCP\GEO

WORK HOURS (DOBSELLE LEGISTAGE) Monday-Friday CONTRACTOR TO PROVIDE ACCESS TO DRIVEWAYS AT ALL TIMES W20-1 AND G20-2 SHALL BE PLACED ON ANY AFFECTED CROSS STREET ACCORDING TO SPEED LIMIT OF CROSS STREET

@8:30Am-3:30pm



## TYPICAL STANDARD DRAWING

(Not to scale)

FOR

- 1. EL MAR AVENUE BETWEEN MIRANDO STREET AND DEHIA STREET
- 2. LOS OLIVOS AVENUE BETWEEN ALORA STREET AND DEHIA STREET
- 3. DEHIA STREET BETWEEN EL MAR AVENUE AND THE BEG. OF ACTON AVENUE





CECILIA'S SAFETY SERVICE, INC.
525 STEVENS AVENUE WEST
SOLANA BEACH, CA 92075
OFFICE: (858) 793-4465
FAX: (858) 793-4495

E-MAIL: cecilias@pacbell.net

PLAN PREPARED BY:
NAME: M. NIETO
DATE: 03/13/06

GSC06-1074(#5)

CSS JOB NUMBER:

GEOSYNTEC CONSULTANTS 11305 RANCHO BERNARDO RD, STE 101 SAN DIEGO, CA 92127 PHONE: (858) 674-6559 FAX: (858) 674-6586

CONTRACTOR:

TYPE OF WORK:
INSTALLATION OF
VAPOR WELLS
THOMAS GUIDE:
1190-H3

APPROVED BY:

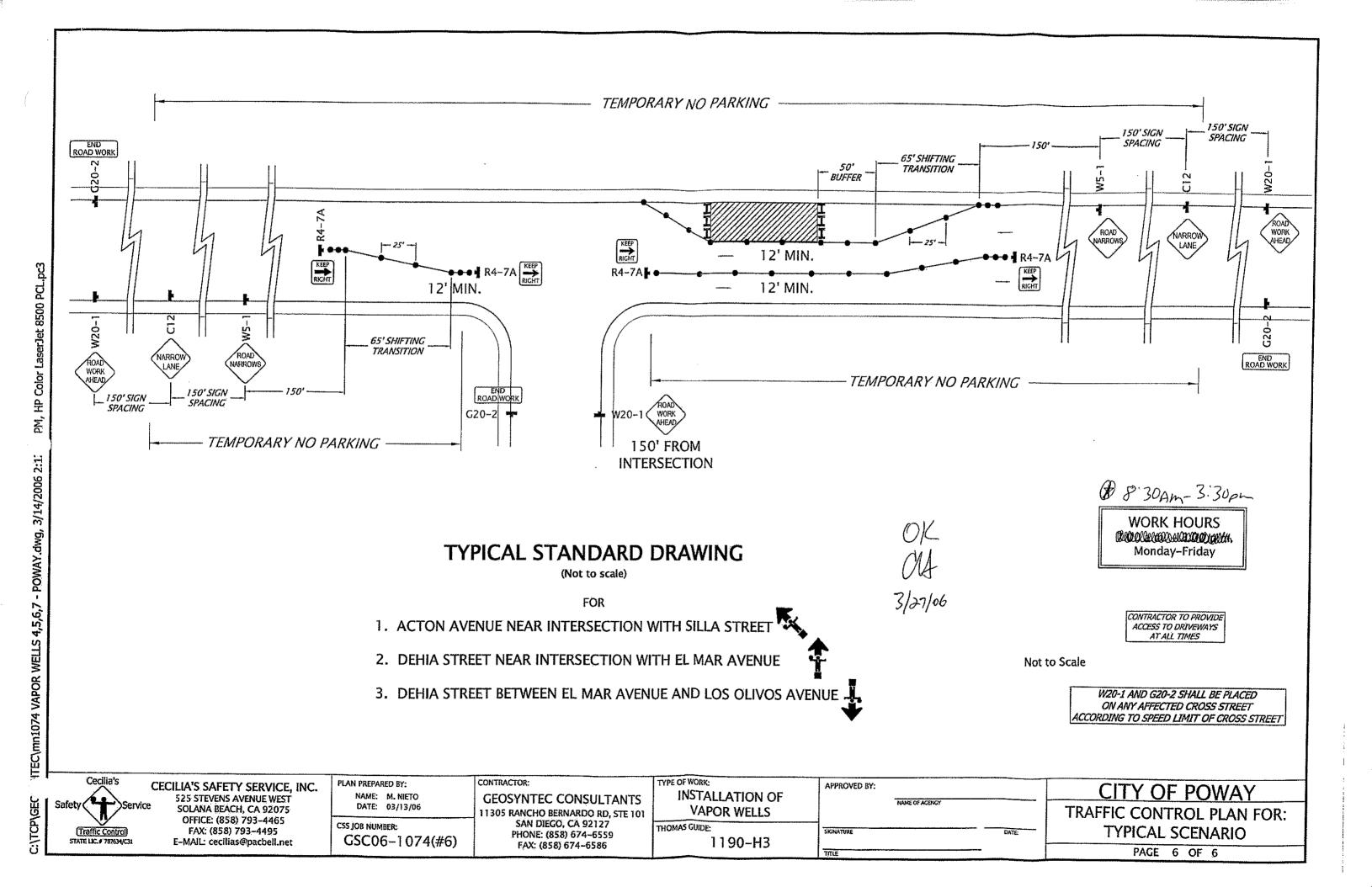
NAME OF AGENCY

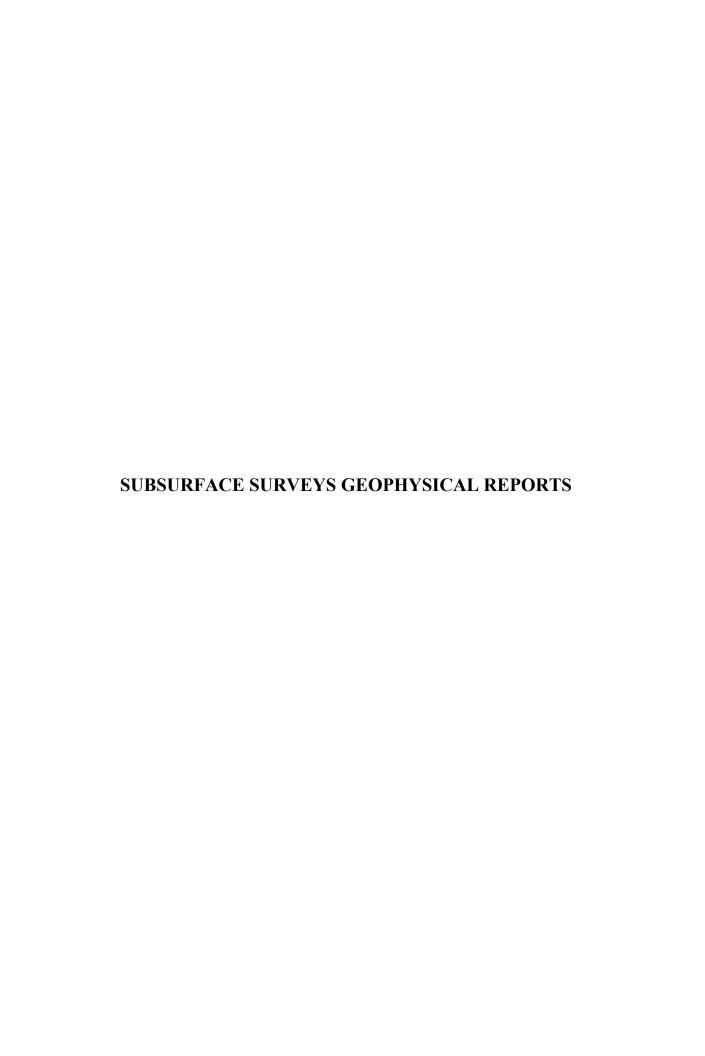
SIGNATURE

DATE:

CITY OF POWAY
TRAFFIC CONTROL PLAN FOR:
TYPICAL SCENARIO

PAGE 5 OF 6





## SubSurface Surveys & Associates, Inc. An Applied Geophysical Company

215 S. Hwy 101, Suite 203 Solana Beach, CA 92075

> Office: (858) 481-8949 (858) 481-8998 Fax:

January 30, 2006

Geosyntec

Attn: Chris Gale

Project/Invoice Number 06-040

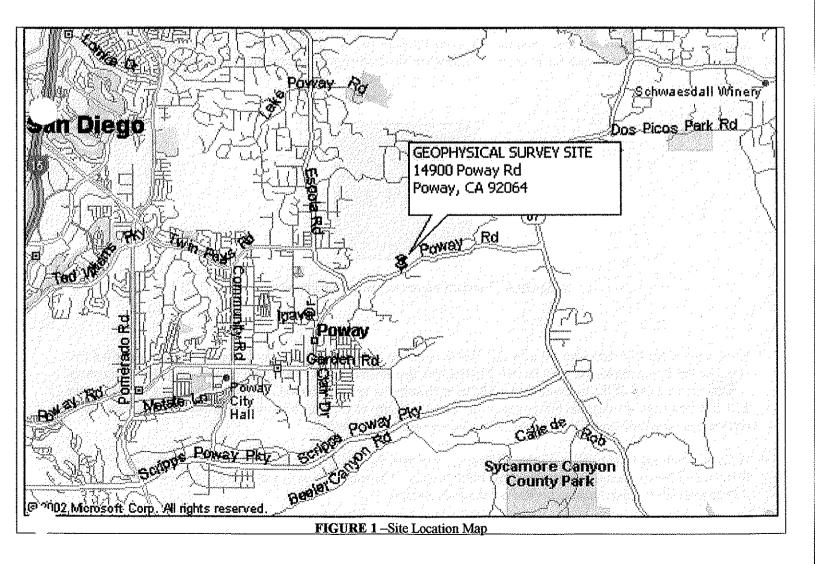
11305 Rancho Bernardo Road,

Suite 101

San Diego, California 92127

Re: Geophysical Investigation, Three Borehole Clearances; 14900 Poway Road, Poway, California

This report is to present the results of our geophysical survey carried out over a portion of the abandoned landfill, located at 14900 Poway Road, in Poway, California (Fig. 1) on January 30, 2006. Purpose of the survey was to locate and identify, insofar as possible, piping, conduit, and other buried features that exist near the immediate vicinity of three proposed borehole locations.



A combination of electromagnetic induction, EM, magnetometry, and ground penetrating radar, GPR, were applied to the search. A utility locator with line tracing capabilities was also brought to the field and used where risers exist onto which a signal could be impressed and traced.

Multiple methods were utilized because each instrument senses different material properties of the ground and buried objects. At any given site the situation, geologic and cultural, may be such that one or more of the instruments may record excessive "noise", the ground may not provide sufficient contrasts, or there ay be overlapping anomalies, for a given instrument to be effective. Summarily stated, there are generally instrumental limits and interpretational impediments.

Survey Design – The area to be surveyed was indicated in the field by the client to be over a portion of an inactive landfill, and included numerous above-ground cultural objects that could potentially cause interference with the instruments should a formal rectilinear grid for data collection be established. In situations such as this, where cultural objects limit the use of a formal rectilinear grid, the best use of time is achieved by systematically free-traversing with the instruments while monitoring them continuously to determine which responses are significant and due to true subsurface targets, and which are due to above-ground features and must be ignored. The EM61, M-Scope, magnetic gradiometer, line tracer and GPR were traversed systematically over the area along the eight lines of the standard search pattern (Diagram A), wherein, there are two sets of three parallel lines, mutually orthogonal, and two diagonals, all centered on the proposed drill location. Adjacent parallel lines are approximately 5 feet apart, and each line is approximately 20 feet long, access permitting. Other traverses were taken, access permitting, for detailing and confirmation where anomalous conditions were found. Multiple GPR profiles were also collected throughout the area and in specific areas for confirmation where other instruments detected anomalies.

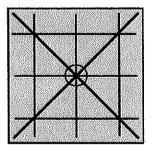


Diagram A: Standard search pattern around borehole

Hard copy of the EM data was not acquired, that is, discrete readings on the nodes of a grid were not recorded that could be put into a contoured map format. Rather, the instruments' meters were read continuously during traverses to detect excursions of the readouts that might have meaning in terms of buried objects. The lack of hard copy for EM data sets does not degrade the quality of the surveys in any way. Hard copy merely provides a basis for report documentation of these geophysical fields, if such documentation is needed.

A Geonic's model EM61 and a Fischer M-Scope, were used for the EM sampling. A Sensors & Software Noggin Ground Penetrating Radar unit produced the radar images. The magnetic gradiometer was a Schonstedt GA-52, and a Metrotech 9890 utility locator rounded out the tools applied.

Brief Description of the Geophysical Methods Applied – The M-Scope device energizes the ground by producing an alternating primary magnetic field with AC current in a transmitting coil. If conducting materials are within the area of influence of the primary field, AC eddy currents are induced to flow in the conductors. A receiving coil senses the secondary magnetic field produced by these eddy currents, and outputs the response as anomalous conditions. The strength of the secondary field is a function of the conductivity of the object, say a pipe, tank or cluster of drums, its size, and its depth and position relative to the instrument's two coils. Conductive objects, to a depth of approximately 7 feet below ground surface (bgs) for the M-Scope are sensed. The device is also somewhat focused; that is, it is more sensitive to conductors below the instrument than they are to conductors off to the side.

The EM61 instrument is a high resolution, time-domain device for detecting buried conductive objects. It consists of a powerful transmitter that generates a pulsed primary magnetic field when its coils are energized, which induces eddy currents in nearby conductive objects. The decay of the eddy currents, following the input pulse, is measured by the coils, which in turn serve as receiver coils. The decay rate is measured for two coils, mounted concentrically, one above the other. By making the measurements at a relatively long time interval (measured in milliseconds) after termination of the primary pulse, the response is nearly independent of the electrical conductivity of the ground. Thus, the instrument is a super-sensitive metal detector. Due to its unique coil arrangement, the response curve is a single well-defined positive peak directly over a buried conductive object. This facilitates quick and accurate location of targets.

The magnetic gradiometer has two flux gate magnetic fixed sensors that are passed closely to and over the ground. When not in close proximity to a magnetic object, that is, only in the earth's field, the instrument emits a sound signal at a low frequency. When the instrument passes over a buried iron or steel object, so that locally there is a high magnetic gradient, the frequency of the emitted sound increases. The frequency is a function of the gradient between the two sensors.

The line locator is used to passively detect energized high voltage electric lines and electrical conduit (50-60 Hz), VLF signals (14-22 kHz), as well as to actively trace other utilities. Where risers are present, the utility locator transmitter can be connected directly to the object, and a signal (9.8-82 kHz) is sent traveling along the conductor, pipe, conduit, etc. In the absence of a riser, the transmitter can be used to impress an input signal on the utility by induction. In either case, the receiver unit is tuned to the input signal, and is used to actively trace the signal along the pipe's surface projection.

The GPR instrument beams energy into the ground from its transducer/antenna, in the form of electromagnetic waves. A portion of this energy is reflected back to the antenna at a boundary in the subsurface across which there is an electrical contrast. The instrument produces a continuous record of the reflected energy as the antenna is traversed across the ground surface. The greater the electrical contrast, the higher the amplitude of the returned energy. The radar wave travels at a velocity unique to the material properties of the ground being investigated, and when these velocities are known, the two-way travel times can be converted to depth. The depth of penetration and image resolution produced are a function of ground electrical conductivity and dielectric constant.

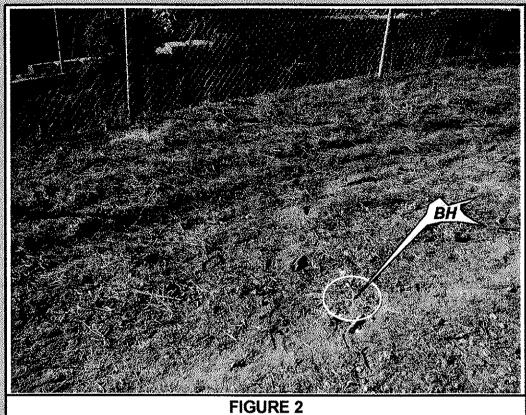
Interpretation and Conclusions - The interpretation took place in real time as the survey progressed, and accordingly, the findings of our investigation were marked on the ground cover at the site. Finally, digital photographs were taken of the site and cleared borehole locations (Figs. 2 & 3). The intent of this document is to demonstrate the procedure, and report the findings of the work.

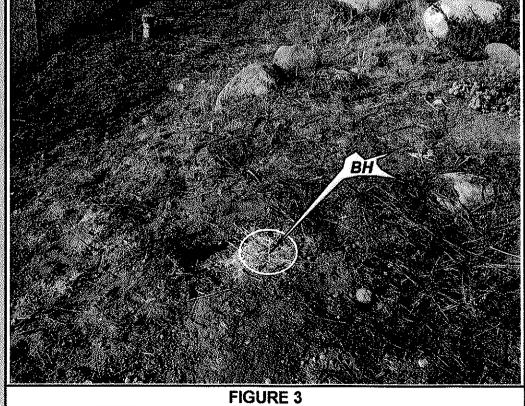
GPR was especially useful at detecting both metallic and non-metallic lines and utilities. According to principles of physics, radar penetration is a function of soil conductivity and dielectric constant. At this site, local conditions were reasonably favorable for radar penetration due to the nature of the soil and materials covering the survey area. This resulted in radar penetration down to approximately 4.0 - 5.0 feet bgs.



# SITE PHOTOGRAPHS

14900 Poway Road, Poway, California





Piping and utilities detected during the survey were marked with spray chalk on the ground cover at the site (pink for unknown lines). Once all detectable utilities and anomalies were accounted for, the cleared drill locations were marked in paint with a white label and yellow "SSS" (Figs. 2 & 3). Due to the fact that the survey was conducted within the vicinity of a reinforced concrete drainage basin and chain-link fence, the survey was slightly hindered by background "noise", especially next to the chain-link fence that borders the drainage swale above the residential houses. The unknown line that runs approximately two feet off of the chain-link fence on the two easternmost boreholes was the reason that the borings were moved, and also to provide adequate access for the drill rig (Figs. 2 & 3).

The three proposed boreholes are located on the southern boundary of the landfill in the center of a roughly 24 foot dirt corridor between the landfill's large concrete drainage basin and the chain-link fence above the residential neighborhood (Figs. 2 & 3). The cleared boring location in the southwest corner of the landfill was unremarkable (Fig. 3). The cleared borehole located in the southeast corner of the landfill is approximately seven feet north of an unknown line that was detected with the magnetic gradiometer and confirmed with the M-Scope, however the reference photograph taken of this cleared boring location was corrupted in the data transfer process and couldn't be retrieved. Nearly centered between the two previously mentioned borings on the southern boundary of the landfill, the third cleared borehole location is about eight feet from the unknown line that parallels the chain-link fence (Fig. 2). This intermediate cleared borehole location's photo is very similar to the photo that was lost in data transfer (southeast corner location) and can convey the relative geometry of the un-photographed boring to the detected anomaly (unknown line), because both boreholes are almost exactly the same in this respect.

The three boreholes are interpreted to be clear, and at no point did any of the utilities detected appear to affect future drilling activities associated with the cleared borehole locations. All detected utilities in the survey area were marked out and it was left up to the client to determine if a borehole should be relocated.

Subsurface Survey's professional personnel are trained and experienced and have completed thousands of projects since the companies inception in 1988. It is our policy to work diligently to bring this training and experience to bear to acquire quality data sets, which in turn, can provide clues useful in formulating our interpretations. Still, non-uniqueness of interpretations, methodological limitations, and non-target interferences are prevailing problems. Subsurface Surveys makes no guarantee either expressed or implied regarding the accuracy of the interpretations presented. And, in no event will Subsurface Surveys be liable for any direct, indirect, special, incidental, or consequential damages resulting from interpretations and opinions presented herewith.

All data acquired in these surveys are in confidential file in this office, and are available for review by your staff, or by us at your request, at any time. We appreciate the opportunity to participate in this project. Please call, if there are questions.

David B. Kaufman Staff Geophysicist Gary W. Crosby, PhD, GP# 960 Senior Geophysicist

Gary W. Crosby

2075 Corte Del Nogal, Suite W Carlsbad, California 92011

> Office: (760) 476-0492 Fax: (760) 476-0493

April 19, 2006

GeoSyntec Consultants, Inc. 11305 Rancho Bernardo Road Suite 101 San Diego, California 92127 Project/Invoice Number 06-154

Attn: Sean McClain

Re: Geophysical Investigation, Borehole Clearance and Utility Investigation, Vicinity of Poway Landfill, Poway,

California

This report is to present the results of our geophysical surveys carried out over portions of residential property located within the vicinity of the Poway Landfill, located in Poway, California (Figure 1) on April 6 and 7, 2006. Purpose of the surveys was to locate and identify, insofar as possible, piping, conduit, and other buried features that exist near the immediate vicinity of 18 proposed boreholes.

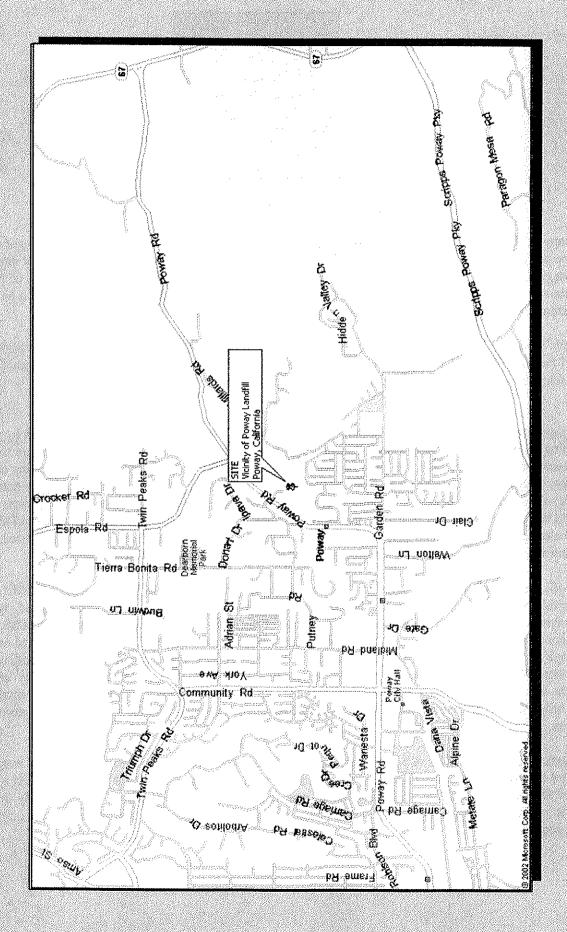
A combination of electromagnetic induction, EM, magnetometry, and ground penetrating radar, GPR, were applied to the search. A utility locator with line tracing capabilities was also brought to the field and used where risers exist onto which a signal could be impressed and traced.

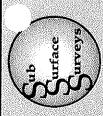
Multiple methods were utilized because each instrument senses different material properties of the ground and buried objects. At any given site the situation, geologic and cultural, may be such that one or more of the instruments may record excessive "noise", the ground may not provide sufficient contrasts, or there may be overlapping anomalies, for a given instrument to be effective. Summarily stated, there are generally instrumental limits and interpretational impediments.

Survey Design – Each of the proposed boreholes were located within residential streets and included numerous aboveground cultural objects that could potentially cause interference with the instruments should a formal rectilinear grid for data collection be established. In situations such as this, where cultural objects limit the use of a formal rectilinear grid, the best use of time is achieved by systematically free-traversing with the instruments while monitoring them continuously to determine which responses are significant and due to true subsurface targets, and which are due to above-ground features and must be ignored. The line tracer and GPR were traversed systematically over each of the areas along the eight lines of the standard search pattern (Figure 2), wherein, there are two sets of three parallel lines, mutually orthogonal, and two diagonals, all centered on the marked drill location. Adjacent parallel lines are approximately 5 feet apart, and each line is approximately 20 feet long, access permitting. Other traverses were taken, access permitting, for detailing and confirmation where anomalous conditions were found. Multiple GPR profiles were also collected throughout the area and in specific areas for confirmation where other instruments detected anomalies.

# TE LOCATION MAP







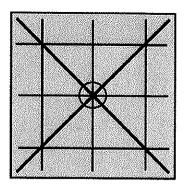


Figure 2: Standard search pattern around borehole

Hard copy of the EM data was not acquired, that is, discrete readings on the nodes of a grid were not recorded that could be put into a contoured map format. Rather, the instruments' meters were read continuously during traverses to detect excursions of the readouts that might have meaning in terms of buried objects. The lack of hard copy for EM data sets does not degrade the quality of the surveys in any way. Hard copy merely provides a basis for report documentation of these geophysical fields, if such documentation is needed.

A Geonic's model EM61, and a Fischer M-Scope, were used for the EM sampling. A Sensors & Software Noggin Ground Penetrating Radar unit produced the radar images, while a Schonstedt GA-52 magnetic gradiometer and a Metrotech 9890 utility locator rounded out the tools applied.

Brief Description of the Geophysical Methods Applied – The M-Scope device energizes the ground by producing an alternating primary magnetic field with AC current in a transmitting coil. If conducting materials are within the area of influence of the primary field, AC eddy currents are induced to flow in the conductors. A receiving coil senses the secondary magnetic field produced by these eddy currents, and outputs the response as anomalous conditions. The strength of the secondary field is a function of the conductivity of the object, say a pipe, tank or cluster of drums, its size, and its depth and position relative to the instrument's two coils. Conductive objects, to a depth of approximately 7 feet below ground surface (bgs) for the M-Scope are sensed. The device is also somewhat focused; that is, it is more sensitive to conductors below the instrument than they are to conductors off to the side.

The EM61 instrument is a high resolution, time-domain device for detecting buried conductive objects. It consists of a powerful transmitter that generates a pulsed primary magnetic field when its coils are energized, which induces eddy currents in nearby conductive objects. The decay of the eddy currents, following the input pulse, is measured by the coils, which in turn serve as receiver coils. The decay rate is measured for two coils, mounted concentrically, one above the other. By making the measurements at a relatively long time interval (measured in milliseconds) after termination of the primary pulse, the response is nearly independent of the electrical conductivity of the ground. Thus, the instrument is a super-sensitive metal detector. Due to its unique coil arrangement, the response curve is a single well-defined positive peak directly over a buried conductive object. This facilitates quick and accurate location of targets.

The magnetic gradiometer has two flux gate magnetic fixed sensors that are passed closely to and over the ground. When not in close proximity to a magnetic object, that is, only in the earth's field, the instrument emits a sound signal at a low frequency. When the instrument passes over a buried iron or steel object, so that locally there is a high magnetic gradient, the frequency of the emitted sound increases. The frequency is a function of the gradient between the two sensors.

The line locator is used to passively detect energized high voltage electric lines and electrical conduit (50-60 Hz), VLF signals (14-22 kHz), as well as to actively trace other utilities. Where risers are present, the utility locator transmitter can be connected directly to the object, and a signal (9.8-82 kHz) is sent traveling along the conductor, pipe, conduit, etc. In the absence of a riser, the transmitter can be used to impress an input signal on the utility by induction. In either case, the receiver unit is tuned to the input signal, and is used to actively trace the signal along the pipe's surface projection.

The GPR instrument beams energy into the ground from its transducer/antenna, in the form of electromagnetic waves. A portion of this energy is reflected back to the antenna at a boundary in the subsurface across which there is an electrical contrast. The instrument produces a continuous record of the reflected energy as the antenna is traversed across the ground surface. The greater the electrical contrast, the higher the amplitude of the returned energy. The radar wave travels at a velocity unique to the material properties of the ground being investigated, and when these velocities are known, the two-way travel times can be converted to depth. The depth of penetration and image resolution produced are a function of ground electrical conductivity and dielectric constant.

<u>Interpretation and Conclusions</u> - The interpretation took place in real time as the survey progressed, and accordingly, the findings of our investigation were marked on the ground cover at the site. The intent of this document is to demonstrate the procedure, and report the findings of the work.

GPR was especially useful at detecting both metallic and non-metallic lines and utilities. According to principles of physics, radar penetration is a function of soil conductivity and dielectric constant. At this site, local conditions were reasonably favorable for radar penetration due to the nature of the soil and materials covering the survey areas. This resulted in radar penetration down to approximately 2.5 to 3.0 feet bgs.

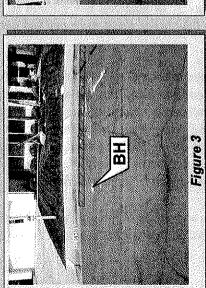
Piping and utilities detected during the survey were marked with spray chalk on the ground cover at the site (red for electric, blue for water, yellow for natural gas, orange for communications, green for sanitary sewer/storm drain, and white for unknown) (Figures 4-23). Once all detectable utilities and anomalies were accounted for, the proposed boreholes were marked with a white circle and a yellow "SSS" (Figures 4-16).

Figures 19, 21, 22 and 23 illustrate a large storm drain line, an additional smaller suspected sewer line, and a water main detected within the survey area. While the depth of the large storm drain line made it difficult to pinpoint with the radar, visual observations and logical estimates were primarily used to determine its path. Additionally, the portion of the water main illustrated in Figure 23 is represented with a "?" to note that this portion of the line was inferred due to weak signal reception. Finally, all detected utilities in the survey areas were marked out and it was left up to the client to determine if the boreholes should be relocated.

Subsurface Survey's professional personnel are trained and experienced and have completed thousands of projects since the company's inception in 1988. It is our policy to work diligently to bring this training and experience to bear to acquire quality data sets, which in turn, can provide clues useful in formulating our interpretations. Still, non-uniqueness of interpretations, methodological limitations, and non-target interferences are prevailing problems. Subsurface Surveys makes no guarantee either expressed or implied regarding the accuracy of the interpretations presented. And, in no event will Subsurface Surveys be liable for any direct, indirect, special, incidental, or consequential damages resulting from interpretations and opinions presented herewith.

All data acquired in these surveys are in confidential file in this office, and are available for review by your staff, or by us at your request, at any time. We appreciate the opportunity to participate in this project. Please call, if there are questions.

Vicinity of Poway Landfill Poway, California



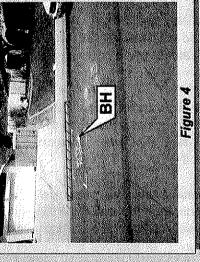
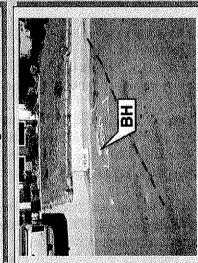
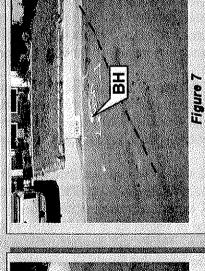
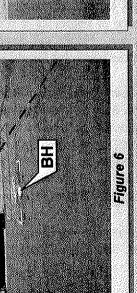


Figure 5

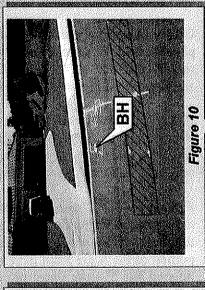


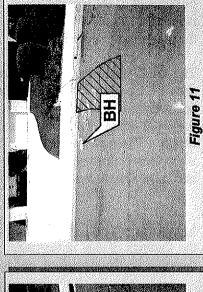


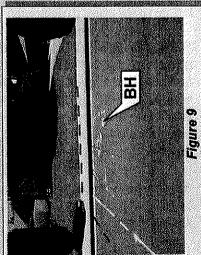


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Figure 8









# ALE PHUTOGRA

Vicinity of Poway Landfill Poway, California

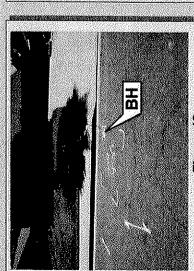


Figure 12

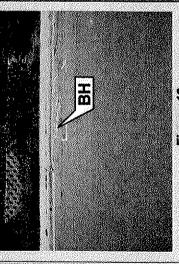


Figure 13



Figure 14



Figure 17

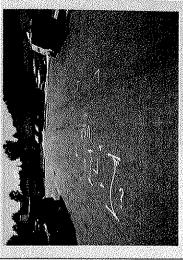


Figure 20



Figure 15



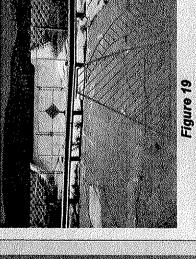
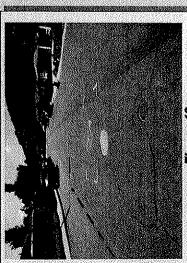


Figure 18



## WIE PHOTOGRAPHS

Vicinity of Poway Landfill Poway, California

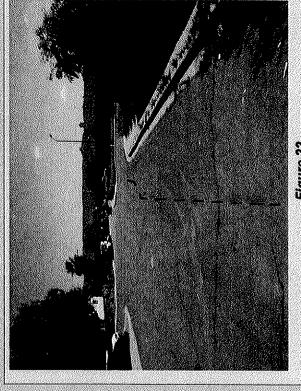
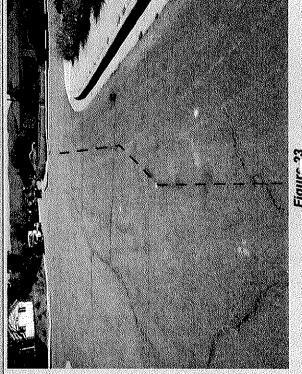


Figure 22

Figure 21



Figur 3

Ryan T. Merkey Project Manager

Gary W. Crosby, PhD, GP# 960 Senior Geophysicist

2075 Corte Del Nogal, Suite W Carlsbad, CA 92011

Project/Invoice Number: 06-114

Office: (760) 476-0492 Fax: (760) 476-0493

April 21st, 2006

GeoSyntec Consultants, Inc.

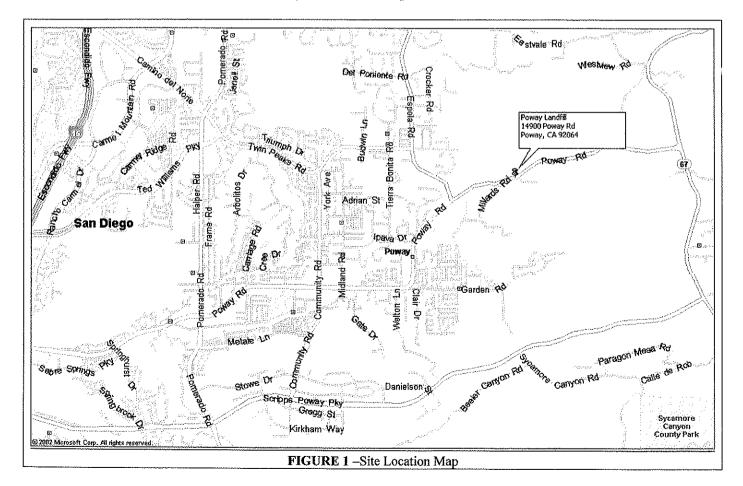
11305 Rancho Bernardo Road, Suite 101 San Diego, CA 92127

Attn: Sean McClain

Re: Geophysical Survey at Poway Landfill, 14900 Poway Blvd, Poway, California

This letter report is to present the results of our geophysical surveying carried out over portions of the Poway Landfill located at 14900 Poway Blvd in Poway, California on March 17th, 2006 (Figure 1). The purpose of the survey was to locate and identify, insofar as possible, piping, conduit, and other buried features that exist in the immediate vicinity of four (4) proposed boreholes.

A combination of electromagnetic induction (EM), magnetometry, and ground penetrating radar (GPR), was applied to the search. A utility locator with line tracing capabilities was also brought to the field and used where risers existed onto which a signal could be impressed and traced.



Multiple methods were utilized because each instrument senses different material properties of the ground and buried objects. At any given site the situation, geologic and cultural, may be such that one or more of the instruments may record excessive "noise", the ground may not provide sufficient contrasts, or there may be overlapping anomalies, for a given instrument to be effective. Summarily stated, there are generally instrumental limits and interpretational impediments.

<u>Survey Design</u> – Four proposed boreholes were marked out on the ground surface by the client. All four boreholes were located onsite.

All geophysical instruments were systematically free traversed in many directions over the proposed borehole locations. The line tracer was also used to trace out all detectable utilities in the area. After all the detectable lines/utilities were marked out, the proposed borehole was remarked out, if required, in a safe location on the ground surface.

Hard copy of the EM and magnetic gradient data were not acquired for the borehole clearances, that is, discrete readings on the nodes of a grid were not recorded that could be put into a contoured map format. Rather, the instruments' meters were read continuously during traverses to detect excursions of the readouts that might have meaning in terms of buried objects. The lack of hard copy for EM and magnetic data sets does not degrade the quality of the surveys in any way. Hard copy merely provides a basis for report documentation of these geophysical fields, if such documentation is needed.

A Geonic's model EM61, and a Fischer M-Scope, were used for the EM sampling. A Sensors and Software Noggin Ground Penetrating Radar unit coupled with a 500-MHz antenna produced the radar images. The magnetic gradiometer was a Schonstedt GA-52, and a Metrotech 9890 utility locator rounded out the tools applied.

Brief Description of the Geophysical Methods Applied - The EM61 instrument is a high resolution, time-domain device for detecting buried conductive objects. It consists of a powerful transmitter that generates a pulsed primary magnetic field when its coils are energized, which induces eddy currents in nearby conductive objects. The decay of the eddy currents, following the input pulse, is measured by the coils, which in turn serve as receiver coils. The decay rate is measured for two coils, mounted concentrically, one above the other. By making the measurements at a relatively long time interval (measured in milliseconds) after termination of the primary pulse, the response is nearly independent of the electrical conductivity of the ground. Thus, the instrument is a super-sensitive metal detector. Due to its unique coil arrangement, the response curve is a single well defined positive peak directly over a buried conductive object. This facilitates quick and accurate location of targets.

The M-Scope device energizes the ground by producing an alternating primary magnetic field with AC current in a transmitting coil. If conducting materials are within the area of influence of the primary field, AC eddy currents are induced to flow in the conductors. A receiving coil senses the secondary magnetic field produced by these eddy currents, and outputs the response to a meter in the form of ground conductivity values for the M-Scope. The strength of the secondary field is a function of the conductivity of the object, say a pipe, tank or cluster of drums, its size, and its depth and position relative to the instrument's two coils. Conductive objects, to a depth of approximately 7 feet for the M-Scope are sensed. The device is also somewhat focused; that is, it is more sensitive to conductors below the instrument than it is to conductors off to the side.

The magnetic gradiometer has two flux gate magnetic fixed sensors that are passed closely to and over the ground. When not in close proximity to a magnetic object, that is, only in the earth's field, the instrument emits a sound signal at a low frequency. When the instrument passes over a buried iron or steel object, so that locally there is a high magnetic gradient, the frequency of the emitted sound increases. The frequency is a function of the gradient between the two sensors.

The line locator is used to passively detect energized high voltage electric lines and electrical conduit (50-60 Hz), VLF signals (14-22 kHz), as well as to actively trace other utilities. Where risers are present, the utility locator transmitter can be connected directly to the object, and a signal (9.8-82 kHz) is sent traveling along the conductor, pipe, conduit, etc. In the absence of a riser, the transmitter can be used to impress an input signal on the utility by induction. In either case, the receiver unit is tuned to the input signal, and is used to actively trace the signal along the pipe's surface projection.

The GPR instrument beams energy into the ground from its transducer/antenna, in the form of electromagnetic waves. A portion of this energy is reflected back to the antenna at a boundary in the subsurface across which there is an electrical contrast. The instrument produces a continuous record of the reflected energy as the antenna is traversed across the ground surface. The greater the electrical contrast, the higher the amplitude of the returned energy. The radar wave travels at a velocity unique to the material properties of the ground being investigated, and when these velocities are known, the two-way travel times can be converted to depth. The depth of penetration and image resolution produced are a function of ground electrical conductivity and dielectric constant.

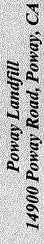
<u>Interpretation and Conclusions -</u> The interpretation took place in real time as the survey progressed, and accordingly, the findings of our investigation were painted on the ground cover at the survey site and documented with digital photographs (figures 2 - 5). The intent of this document is to demonstrate the procedure, and report the findings of the work.

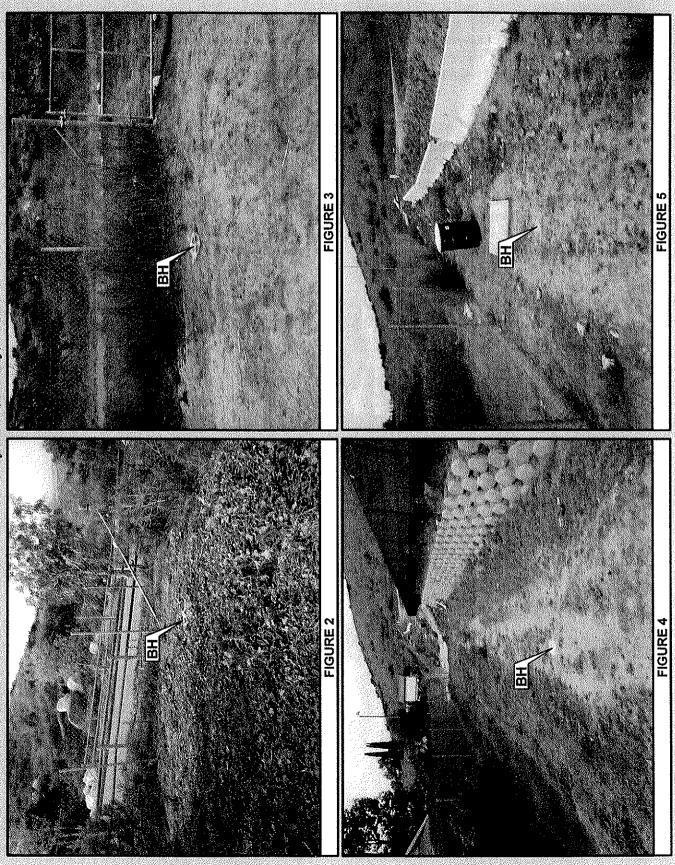
The GPR was useful in locating nonmetallic pipes and utilities as well as confirming the existence and locations of metallic pipes and objects detected with other geophysical instruments. Radar penetration is a function of soil conductivity and dielectric constant. At this site local conditions was unfavorable, resulting in radar penetration down to approximately 2 feet below the ground surface. It should be noted that due to the heterogeneous nature of the soils, the depth of radar penetration might vary from one area to another.

The proposed borehole shown in figure 2 was moved a couple feet to the west to avoid an unknown line imaged with GPR, also note the electric line that was detected 4 feet to the west of the replaced borehole. The proposed borehole shown in figure 3 was moved a couple feet to the south to avoid an unknown line detected with the M-Scope. The remaining proposed boreholes were safe where originally marked and were not moved.

Once all detectable utilities and anomalies were delineated, the proposed boreholes were marked out in safe locations, at least three feet from any detected anomaly, with a white circle and a yellow "SSS".

# BORFILOLE PLOTOGRAPHS





Subsurface Survey & Associates' professional personnel are trained and experienced and have completed thousands of projects since the company's inception in 1988. It is our policy to work diligently to bring this training and experience to bear to acquire quality data sets, which in turn, can provide clues useful in formulating our interpretations. Still, non-uniqueness of interpretations, methodological limitations, and non-target interferences are prevailing problems. Subsurface Surveys makes no guarantee either expressed or implied regarding the accuracy of the interpretations presented. And, in no event will Subsurface Surveys be liable for any direct, indirect, special, incidental, or consequential damages resulting from data sets and interpretations presented herewith.

All data acquired in these surveys are in confidential file in this office, and are available for review by your staff, or by us at your request, at any time. We appreciate the opportunity to participate in this project. Please call, if there are questions.

George E. Herman IV Staff geophysicist/geologist Gary W. Grosby, PhD, GP 969 Senjor Geophysicist/Geologist

2075 Corte Del Nogal, Suite W Carlsbad, California 92011

> Office: (760) 476-0492 Fax: (760) 476-0493

May 1, 2006

GeoSyntec Consultants, Inc. 11305 Rancho Bernardo Road Suite 101 San Diego, California 92127 Project/Invoice Number 06-178

Attn: Sean McClain

Re: Geophysical Investigation, Borehole Clearance, Vicinity of Poway Landfill, Poway, California

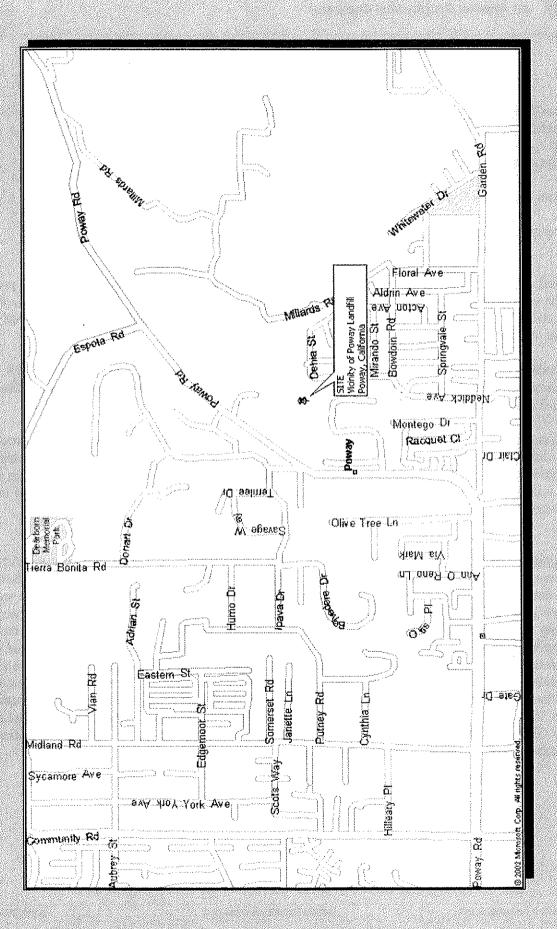
This report is to present the results of our geophysical survey carried out over portions of residential property located within the vicinity of the Poway Landfill, located in Poway, California (Figure 1) on 27 April 2006. Purpose of the survey was to locate and identify, insofar as possible, piping, conduit, and other buried features that exist near the immediate vicinity of 3 proposed boreholes.

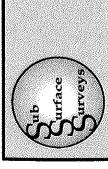
A combination of electromagnetic induction, EM, magnetometry, and ground penetrating radar, GPR, were applied to the search. A utility locator with line tracing capabilities was also brought to the field and used where risers exist onto which a signal could be impressed and traced.

Multiple methods were utilized because each instrument senses different material properties of the ground and buried objects. At any given site the situation, geologic and cultural, may be such that one or more of the instruments may record excessive "noise", the ground may not provide sufficient contrasts, or there may be overlapping anomalies, for a given instrument to be effective. Summarily stated, there are generally instrumental limits and interpretational impediments.

Survey Design – Each of the proposed boreholes were located within residential streets and included numerous aboveground cultural objects that could potentially cause interference with the instruments should a formal rectilinear grid for data collection be established. In situations such as this, where cultural objects limit the use of a formal rectilinear grid, the best use of time is achieved by systematically free-traversing with the instruments while monitoring them continuously to determine which responses are significant and due to true subsurface targets, and which are due to above-ground features and must be ignored. The line tracer and GPR were traversed systematically over each of the areas along the eight lines of the standard search pattern (Figure 2), wherein, there are two sets of three parallel lines, mutually orthogonal, and two diagonals, all centered on the marked drill location. Adjacent parallel lines are approximately 5 feet apart, and each line is approximately 20 feet long, access permitting. Other traverses were taken, access permitting, for detailing and confirmation where anomalous conditions were found. Multiple GPR profiles were also collected throughout the area and in specific areas for confirmation where other instruments detected anomalies.

## STR LOCATOR KAP





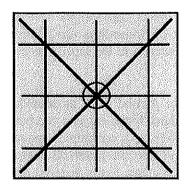


Figure 2: Standard search pattern around borehole

Hard copy of the EM data was not acquired, that is, discrete readings on the nodes of a grid were not recorded that could be put into a contoured map format. Rather, the instruments' meters were read continuously during traverses to detect excursions of the readouts that might have meaning in terms of buried objects. The lack of hard copy for EM data sets does not degrade the quality of the surveys in any way. Hard copy merely provides a basis for report documentation of these geophysical fields, if such documentation is needed.

A Geonic's model EM61, and a Fischer M-Scope, were used for the EM sampling. A Sensors & Software Noggin Ground Penetrating Radar unit produced the radar images, while a Schonstedt GA-52 magnetic gradiometer and a Metrotech 9890 utility locator rounded out the tools applied.

Brief Description of the Geophysical Methods Applied – The M-Scope device energizes the ground by producing an alternating primary magnetic field with AC current in a transmitting coil. If conducting materials are within the area of influence of the primary field, AC eddy currents are induced to flow in the conductors. A receiving coil senses the secondary magnetic field produced by these eddy currents, and outputs the response as anomalous conditions. The strength of the secondary field is a function of the conductivity of the object, say a pipe, tank or cluster of drums, its size, and its depth and position relative to the instrument's two coils. Conductive objects, to a depth of approximately 7 feet below ground surface (bgs) for the M-Scope are sensed. The device is also somewhat focused; that is, it is more sensitive to conductors below the instrument than they are to conductors off to the side.

The EM61 instrument is a high resolution, time-domain device for detecting buried conductive objects. It consists of a powerful transmitter that generates a pulsed primary magnetic field when its coils are energized, which induces eddy currents in nearby conductive objects. The decay of the eddy currents, following the input pulse, is measured by the coils, which in turn serve as receiver coils. The decay rate is measured for two coils, mounted concentrically, one above the other. By making the measurements at a relatively long time interval (measured in milliseconds) after termination of the primary pulse, the response is nearly independent of the electrical conductivity of the ground. Thus, the instrument is a super-sensitive metal detector. Due to its unique coil arrangement, the response curve is a single well-defined positive peak directly over a buried conductive object. This facilitates quick and accurate location of targets.

The magnetic gradiometer has two flux gate magnetic fixed sensors that are passed closely to and over the ground. When not in close proximity to a magnetic object, that is, only in the earth's field, the instrument emits a sound signal at a low frequency. When the instrument passes over a buried iron or steel object, so that locally there is a high magnetic gradient, the frequency of the emitted sound increases. The frequency is a function of the gradient between the two sensors.

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The GPR instrument beams energy into the ground from its transducer/antenna, in the form of electromagnetic waves. A portion of this energy is reflected back to the antenna at a boundary in the subsurface across which there is an electrical contrast. The instrument produces a continuous record of the reflected energy as the antenna is traversed across the ground surface. The greater the electrical contrast, the higher the amplitude of the returned energy. The radar wave travels at a velocity unique to the material properties of the ground being investigated, and when these velocities are known, the two-way travel times can be converted to depth. The depth of penetration and image resolution produced are a function of ground electrical conductivity and dielectric constant.

<u>Interpretation and Conclusions</u> - The interpretation took place in real time as the survey progressed, and accordingly, the findings of our investigation were marked on the ground cover at the site. The intent of this document is to demonstrate the procedure, and report the findings of the work.

GPR was especially useful at detecting both metallic and non-metallic lines and utilities. According to principles of physics, radar penetration is a function of soil conductivity and dielectric constant. At this site, local conditions were reasonably favorable for radar penetration due to the nature of the soil and materials covering the survey areas. This resulted in radar penetration down to approximately 2.5 to 3.0 feet bgs.

Piping and utilities detected during the survey were marked with spray chalk on the ground cover at the site (red for electric, blue for water, yellow for natural gas, orange for communications, green for sanitary sewer/storm drain, and white for unknown). Once all detectable utilities and anomalies were accounted for, the proposed boreholes were marked with a white circle and a yellow "SSS" (Figures 4-6).

Each borehole was positioned, at a minimum, 5 feet from all detectable utilities and/or anomalies. Finally, all detected utilities in the survey areas were marked out and it was left up to the client to determine if the boreholes should be relocated.

Subsurface Survey's professional personnel are trained and experienced and have completed thousands of projects since the company's inception in 1988. It is our policy to work diligently to bring this training and experience to bear to acquire quality data sets, which in turn, can provide clues useful in formulating our interpretations. Still, non-uniqueness of interpretations, methodological limitations, and non-target interferences are prevailing problems. Subsurface Surveys makes no guarantee either expressed or implied regarding the accuracy of the interpretations presented. And, in no event will Subsurface Surveys be liable for any direct, indirect, special, incidental, or consequential damages resulting from interpretations and opinions presented herewith.

All data acquired in these surveys are in confidential file in this office, and are available for review by your staff, or by us at your request, at any time. We appreciate the opportunity to participate in this project. Please call, if there are questions.

Ryan T. Merkey

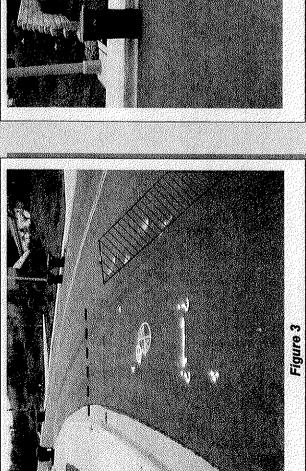
**Project Manager** 

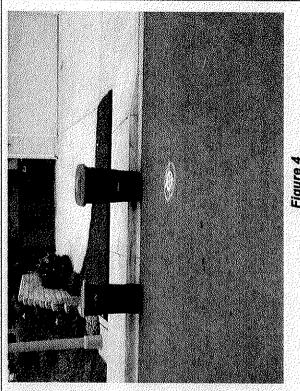
Gary W. Crosby, PhD, GP# 960

Senior Geophysicist

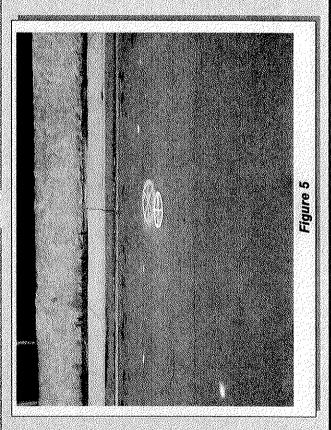
# PORFIQE PRATOSPAPES

Vicinity of Poway Landfill Poway, California









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